



Town of Arlington, MA Redevelopment Board

Agenda & Meeting Notice May 3, 2021

This meeting is being held remotely in accordance with the Governor's March 12, 2020 Order Suspending Certain Provisions of the Open Meeting Law G.L. c. 30A, Section 20. Public comments will be accepted during the public comment periods designated in the agenda. Per Board Rules and Regulations, public comments will be accepted during the public comment periods designated on the agenda. Written comments may be provided by email to jraitt@town.arlington.ma.us by May 3, 2021 at 4:00 p.m. The Board requests that correspondence that includes visual information should be provided by April 30, 2021 at 12:00 p.m.

The Arlington Redevelopment Board will meet Monday, May 3, 2021 at 7:00 PM in the

Join Zoom Meeting with audio and video using this link and Meeting ID:

<https://zoom.us/j/91926215082> Enter Meeting ID: 919 2621 5082 or join by calling: 1-646-876-9923 and enter the Meeting ID 919 2621 5082 then #.

1. Public Hearing

7:00 p.m. **Docket #3650
190 & 192-200 Massachusetts Avenue
Continued Public Hearing**

PLEASE NOTE: THE APPLICANT HAS REQUESTED A CONTINUATION OF THE HEARING TO JUNE 7TH

Board will continue a public hearing which began on April 5, 2021 to review an application filed February 8, 2021 by 190-200 Massachusetts Ave, LLC, 455 Massachusetts Avenue, Suite 1, Arlington, MA, in accordance with the provisions of MGL Chapter 40A § 11, and the Town of Arlington Zoning Bylaw Section 3.4, Environmental Design Review. The applicant proposes to construct a mixed-use building containing retail and 37 residential units, including 8 affordable units, at 190 & 192-200 Massachusetts Avenue, Arlington, MA in the B3 Village Business District. The opening of the Special Permit is to allow the Board to review and approve the development under Section 3.4, Environmental Design Review.

- Board will vote to continue the hearing to June 7, 2021.

2. Updates to Housing Production Plan and Open Space and Recreation Plan

7:05 p.m. Staff will provide an update on the HPP and OSRP plan processes, including community engagement and timelines.

Staff will provide update, Board will discuss.

3. Adjourn to Annual Town Meeting

7:55 p.m. Board will adjourn to Annual Town Meeting

4. Correspondence Received

Correspondence received from:
L. Cardarelli 04242021



Town of Arlington, Massachusetts

Public Hearing

Summary:

7:00 p.m.

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ATTACHMENTS:

Type	File Name	Description
▢ Reference Material	NEW_Continuation_request_re_Docket_3650_-_190_192-200_Mass_Ave_from_R._Annese_04262021.pdf	NEW Continuation request re Docket 3650 190 192-200 Mass. Ave. from R. Annese 04262021
▢ Reference Material	EDR_Public_Hearing_Memo_Docket_3650_190-200_Mass_Ave.pdf	EDR Public Hearing Memo Docket 3650 190-200 Mass Ave
▢ Reference Material	Docket_3650_Updated_Solar_Studies_dated_March_18_2021.pdf	Docket 3650 Updated Solar Studies 03182021
▢ Reference Material	Docket_3650_Combined_Application_Materials-_compressed.pdf	Docket 3650 Combined Application Materials

From: "Robert Annese" <law@robertannese.com>
To: "Jennifer Raitt" <JRaitt@town.arlington.ma.us>
Cc: <john@summit-res.net>, <cynthia@pasciutoproperties.com>
Date: 04/26/2021 03:32 PM
Subject: 190-200 Massachusetts Avenue, Arlington, MA

CAUTION: This email originated from outside of the Town of Arlington's email system. Do not click links or open attachments unless you recognize the REAL sender (whose email address in the From: line in "< >" brackets) and you know the content is safe.

Hi Jenny:

The Applicant is requesting a continuance of the hearing scheduled for Monday, May 3rd to the next available hearing date because of changes with respect to its plans in order to expand the commercial space in the building which in turn will require other changes to the plans.

Would you please let my office know the if the request will be granted by the Members of the ARB.

Thank you.

Bob

BE AWARE OF WIRE FRAUD – IF YOU RECEIVE AN EMAIL FROM OUR OFFICE REQUESTING THAT YOU WIRE FUNDS, YOU MUST CALL OUR OFFICE AND VERBALLY CONFIRM THE REQUEST PRIOR TO THE TRANSFER OF ANY FUNDS. WIRING INSTRUCTIONS WILL ONLY COME FROM OUR OFFICE. IF YOU RECEIVE INSTRUCTIONS FROM ANY OTHER PARTY (INCLUDING YOUR LENDER) CALL US IMMEDIATELY.

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Town of Arlington, Massachusetts
Department of Planning & Community Development
730 Massachusetts Avenue, Arlington, Massachusetts 02476

Public Hearing Memorandum

The purpose of this memorandum is to provide the Arlington Redevelopment Board and public with technical information and a planning analysis to assist with the regulatory decision-making process.

To: Arlington Redevelopment Board

From: Jennifer Raitt, Secretary Ex Officio

Subject: Environmental Design Review, 190 & 192-200 Massachusetts Avenue, Arlington, MA, Docket #3650

Date: March 31, 2021

I. Docket Summary

This is an application by 190-200 Massachusetts Ave, LLC, 455 Massachusetts Avenue, Suite 1, Arlington, MA, to open Special Permit Docket #3650 for the construction of a mixed-use building containing retail and 37 residential units, including 8 affordable units, at 190 & 192-200 Massachusetts Avenue, Arlington, MA in the B3 Village Business District. The opening of the hearing is to allow the Board to review and approve the development under Section 3.4, Environmental Design Review Special Permit of the Arlington Zoning Bylaw.

The proposed building is a five-story mixed-use structure. The 37 residential units are a mix of studios, one-bedrooms, and two-bedrooms. Eight affordable units, or 21% of the total units, are provided. The single commercial space is proposed to be 2,084 square feet. Parking is provided onsite in a garage with 15 parking spaces.

Materials submitted for consideration of this application:

- Application for EDR Special Permit, including an Environmental Impact Statement;
- Site Development Plan Set, prepared by Allen & Major Associates, Inc, dated March 10, 2021;

- Architectural Drawing Set, including floor plans, elevations, renderings and a solar studies, prepared by Market Square Architects, dated March 1, 2021;
- Updated Solar Study, prepared by Market Square Architects, dated March 18, 2021;
- Reduced Height Buffer Area Narrative, prepared by Market Square Architects;
- Figure 1, Reduced Height Buffer Area, prepared by Allen & Major Associates, dated October 28, 2020;
- Drainage Summary Letter, prepared by Allen & Major Associates, dated March 10, 2021;
- Traffic Impact Statement Memorandum, prepared by MDM Transportation Consultants, Inc, dated December 21, 2020; and
- LEED Checklist.

II. Application of Special Permit Criteria (Arlington Zoning Bylaw, Section 3.3)

1. Section 3.3.3.A.

The use requested is listed as a Special Permit in the use regulations for the applicable district or is so designated elsewhere in this Bylaw.

Mixed-use is allowed by Special Permit in the B3 Village Business District. The Zoning Bylaw, in Section 5.5.1.D, indicates that the district's predominant uses include retail, service, and office establishments catering to both convenience and comparison-good shoppers and oriented to pedestrian traffic. Mixed-use buildings are allowed and encouraged, including in the principal business area at Lake Street and Massachusetts Avenue. Mixed-use is a combination of two or more distinct land uses, such as those proposed by this applicant, and the definition encourages such uses to be in a single, multi-story structure, such as that proposed by the applicant.

The Capitol Square area, at the intersection of Lake Street and Massachusetts Avenue, is the major shopping district in East Arlington. The B3 District stretches from Melrose Street and Marathon Street to just beyond Winter Street. To the west are single-story and three-story buildings in the B3 District; to the east are single-story buildings. Immediately adjacent to the B3 district are two high-density residential districts (R5 to the south and west and R6 to the north), including a six-story, 47-unit building and a five-story, 22-unit building. Beyond the parcels fronting on Massachusetts Avenue is the R2 district where the traditional two-family residential streetscape of East Arlington is dominant.

The Board can find that this condition is met.

2. Section 3.3.3.B.

The requested use is essential or desirable to the public convenience or welfare.

The requested use is essential and desirable. The second key finding in the Master Plan notes that *“Massachusetts Avenue has the capacity for growth. It can support mixed-use development commensurate with its function as Arlington’s primary commercial corridor. Massachusetts Avenue is accessible to neighborhoods throughout the town; it has frequent bus service, bicycle routes, and good walkability. Increased density through greater building heights and massing would benefit the corridor from an urban design perspective and benefit the town from a fiscal perspective.”*(p.8)

This proposal will bring thirty-seven (37) new two-bedroom, one-bedroom, and studio residential units, of which eight¹ will be affordable to households earning at or below 70% of the area median income, and one commercial space. The Town has clearly established affordable housing priorities described in its Housing Production Plan (adopted by the Select Board and Redevelopment Board and approved by the State in 2016). New housing opportunities, including market-rate and affordable homes, are needed in the community; this project helps address that demand.

While the addition of residential units is desired, there is a net loss of 9,300 square feet of commercial space. The loss is due to the need to also provide parking on the site. A 2,084 square foot commercial space (noted as retail/restaurant on the architectural plans) would remain following the redevelopment of the site. Although several commercial spaces in the existing building are vacant due to the pandemic or other business reasons,² the loss of an entire block of commercial storefronts is difficult to balance with the applicant’s proposal to consolidate the commercial storefront to one space and to provide parking.

It should be noted that an apartment building is allowed by special permit in the B3 District, so providing any commercial space within the building remains a desirable condition. The Board can find that this condition is met.

3. Section 3.3.3.C.

The requested use will not create undue traffic congestion or unduly impair pedestrian safety.

As discussed in more detail under the EDR Circulation criteria, while the Traffic Impact Analysis shows a net reduction in trips to the site, that may be the result of the loss of a substantial amount of commercial space in the building. The Traffic Impact Analysis is missing key details about how new trips will access the site to fully assess traffic congestion around the site.

¹ Eight units exceeds the requirement of Section 8.2.

² The Town tracks commercial and industrial property vacancies. This property owner has more commercial vacancies in Arlington than any other commercial property owner in Arlington.

It is not expected that the proposed project will unduly impair pedestrian safety.

4. Section 3.3.3.D.

The requested use will not overload any public water, drainage or sewer system or any other municipal system to such an extent that the requested use or any developed use in the immediate area or in any other area of the Town will be unduly subjected to hazards affecting health, safety, or the general welfare.

A Drainage Summary letter indicates that standards have been met with the proposed stormwater design, which includes a new connection that collects stormwater from the roof and directs into the drainage system in the street. In addition, a very modest amount of landscaped areas will be added to the site resulting in a reduction of impervious area and quantity of stormwater flowing from the site. The proposed project will improve, not overload, public utilities. The Board can find that this condition is met.

5. Section 3.3.3.E.

Any special regulations for the use as may be provided in the Bylaw are fulfilled.

As a condition of any decision for the proposed mixed-use building, the Applicant will need to fulfill the requirements of Section 8.2 which outline the affordable housing requirements. A building with thirty-seven (37) units requires six affordable units that are representative of the mix of units in the building available to eligible households making up to 70% of the area median income. In excess of the requirement, applicant materials indicate that eight units would be designated as affordable and are equitably dispersed throughout the proposed building. There are no other special regulations for the use that must be fulfilled. The Board can find that this condition is met.

6. Section 3.3.3.F.

The requested use will not impair the integrity or character of the district or adjoining districts, nor be detrimental to the health or welfare.

The proposed building departs from the commercial block architecture exhibited most prominently in the structure containing the Capitol Theatre. Neither the former bank building, which was adaptively reused for restaurants for decades, nor the rest of this commercial block are not listed on the Arlington Historical Commission's Inventory. The Historic Preservation Survey Master Plan recommended including this block on a Capitol Square area form. The prominent bank entry of the bank building is proposed to be retained and gives the ground floor its brick aesthetic consistent with the Capitol Square business district. The upper floor façade is a mix of white and grey fiber cement panels. Attention should be given to better blending the bank entry into the second story through potentially the color choice of the cement panels or other building façade materials which better align with masonry on the first floor.

Further, the Applicant should clarify whether the screened views into the parking garage on Lake Street are necessary for ventilation of the garage. In general, this style is unfriendly to pedestrians and does not create an inviting streetscape. If the screened openings are not necessary for ventilation, or even if they are, the applicant should consider a different treatment that is more supportive of the pedestrian experience.

The building also includes differentiation of the upper story and variation in the façade with a common roof deck overlooking Massachusetts Avenue, which is encouraged in the Arlington Design Standards.

Bicycle parking is available throughout the building and vehicular parking is located on the ground floor of the building. Signage and wayfinding placeholders are shown on the plans, but the Applicant should provide details regarding dimensions and materials.

The Applicant is proposing a floor area ratio (FAR) of 4.1. The existing building's FAR is 0.9. The Zoning Bylaw allows a maximum FAR of 1.5 for a mixed-use building on a lot less than 20,000 square feet in this zoning district. The Capitol Theatre building at 202-218 Massachusetts Avenue, developed in the 1920s, exceeds the FAR of 1.5 at 2.6.³ If the Applicant is limited to the FAR of 1.5, the resulting building could have a maximum floor area of 16,701 square feet. This might be a single-story building with a partial second story covering the full lot, or a three-story building covering half the lot. The maximum FAR of 1.5 is at odds with the maximum story and height allowed in the Zoning Bylaw of up to 5 stories and 60 feet respectively.

Regarding the maximum number of stories, the Applicant seeks relief from the Reduced Height Buffer area of Section 5.3.19 to allow the maximum 5 stories and 60 feet. The Applicant states that since the lower density R2 district is not immediately adjacent to the property, the affect of the greater height is limited. A shadow study has been provided which indicates that only in the winter months will shadows from the building extend across Massachusetts Avenue to the R2 district on Cleveland Street.

The proposed mixed-use building is in keeping with adjacent land uses, particularly along Massachusetts Avenue. While it is desired to maintain or increase the amount of commercial space, new residential units will not impair the integrity or character of the district or the adjoining districts and it will not be detrimental to health or welfare. While the proposed structure building design is generally consistent with the Design Standards for the Town of Arlington, it is lacking active ground floor uses which are encouraged along Massachusetts Avenue per the Design Standards.

³ In fact, because the lot at 202-218 Massachusetts Avenue is more than 20,000 square feet, the FAR for a mixed-use building is 1.4 per the Zoning Bylaw.

7. Section 3.3.3.G.

The requested use will not, by its addition to a neighborhood, cause an excess of the use that could be detrimental to the character of said neighborhood.

The use will not be in excess or detrimental to the character of the neighborhood. The Board can find this condition is met.

III. Environmental Design Review Standards (Arlington Zoning Bylaw, Section 3.4)

1. EDR-1 Preservation of Landscape

The landscape shall be preserved in its natural state, insofar as practicable, by minimizing tree and soil removal, and any grade changes shall be in keeping with the general appearance of neighboring developed areas.

The existing property is entirely impervious and there is no natural landscape to preserve with the building fully saturating the building lot. As part of the project, approximately 1,125 square feet of impervious material will be replaced with grassed areas and arborvitae along the rear property line. Along the street, perennial plantings and shrubs will be planted. The new landscaping will provide a buffer from the property at 8 Lake Street, which includes a rear parking lot and drive aisle. The Board can find that this condition is met.

2. EDR-2 Relation of the Building to the Environment

Proposed development shall be related harmoniously to the terrain and to the use, scale, and architecture of the existing buildings in the vicinity that have functional or visible relationship to the proposed buildings. The Arlington Redevelopment Board may require a modification in massing so as to reduce the effect of shadows on the abutting property in an R0, R1 or R2 district or on public open space.

There are a range of architectural styles in the vicinity. The proposed development is in the B3 Village Business District which is the dominant zoning district in Capitol Square. Building heights in the vicinity range from single-story to six-story. As the Town's Design Standards indicate, greater height in certain locations can be beneficial. The proposed building step-back helps to diminish the impact of overall building height. While the ground floor storefront has a compatible aesthetic for the business district, it does not relate well to the upper floors. More could be done to improve the human scale at the ground floor. An overall improved building façade treatment that relates to the building's prominent location and an active street level use would improve the relationship of the building to the environment.

3. EDR-3 Open Space

All open space (landscaped and usable) shall be so designed as to add to the visual amenities of the vicinity by maximizing its visibility for persons passing by the site or overlooking it from nearby properties. The location and configuration of usable open

space shall be so designed as to encourage social interaction, maximize its utility and facilitate maintenance.

As noted above, the proposed project will add areas of landscaping to an existing impervious site. The proposal includes approximately 1,125 square feet of landscaped open space along the rear of the building, which also provides a buffer with the adjacent building at 8 Lake Street. This is about half of the 10% landscaped open space requirement. The usable open space is located on the roof deck and is approximately 2,140 square feet. This is only 9% of the usable open space requirement and does not meet all the requirements for usable open space.

Additionally, the setback for the proposed building is on a corner lot meaning that the setback should be the same as an adjacent lot. On the Lake Street and Chandler Street frontage, the adjoining lot is an apartment building in the R5 Zoning District which would be approximately 16.5 ft. (10 ft + (65 ft/10 ft)). The Board can adjust this requirement per Section 5.3.16.

Lastly, a 15-foot buffer is required along the parking lot adjacent to the R5 lot to the rear of the building. This proposed buffer would be planted and a vinyl fence will be installed allowing the buffer to be reduced to 7.5 feet, which is seen on the plans.

4. EDR-4 Circulation

With respect to vehicular and pedestrian and bicycle circulation, including entrances, ramps, walkways, drives, and parking, special attention shall be given to location and number of access points to the public streets (especially in relation to existing traffic controls and mass transit facilities), width of interior drives and access points, general interior circulation, separation of pedestrian and vehicular traffic, access to community facilities, and arrangement of vehicle parking and bicycle parking areas, including bicycle parking spaces required by Section 6.1.12 that are safe and convenient and, insofar as practicable, do not detract from the use and enjoyment of proposed buildings and structures and the neighboring properties.

The proposed project includes 15 spaces for vehicles located in the ground floor garage, including one HP vehicle space and an EV charger space. Short-term and long-term bicycle parking is provided. Improved sidewalks, curb cuts, and curb treatments are also proposed. Any such proposed improvements in the public right-of-way will require additional review and approval by the Engineering Division.

The parking requirement is for mixed-use which calculates the parking required for each individual use; the parking required for the residential use totals 45 parking spaces, and while the commercial space would typically require seven parking spaces, the first 3,000 square feet of non-residential space in mixed-use buildings is exempt from the parking requirements per Section 6.1.10.C. The applicant is requesting a reduction in the number of parking spaces provided to 15 spaces per Section 6.1.5 of the Zoning Bylaw. If the parking requirement is further reduced to eliminate four more parking spaces, the retail/restaurant space could increase.

Regarding meeting the long-term bicycle parking requirements, 60 spaces are provided, which exceeds the requirement by three spaces. While it is appreciated that the long-term bicycle storage is provided on the residential floors, it is not provided on all residential floors and there is not any indication that the required long-term bicycle parking for the retail/restaurant space is provided. Additionally, the applicant should clarify the size of the elevator and whether a bicycle could fit in the elevator without having to lift the bike. If the elevator is too small and people to use the stairs with their bikes, that will make the bike parking unusable for most people. The required short-term bicycle parking is provided near the entrance to the garage and residential lobby. This is not an ideal location for short-term parking for visitors to the retail/restaurant space. While the space along Massachusetts Avenue is limited, effort should be made to identify a location for short-term bicycle parking.

Vehicle Parking Requirements*			
<u>Number of Bedrooms/ Apartment Use</u>	<u>Number of Units</u>	<u>Zoning Requirement</u>	<u>Total Parking Required</u>
2-bedroom	4	2	8
1-bedroom	23	1.15	27
Studio	10	1	10
Total Required Vehicle Parking			45
Total Proposed Vehicle Parking after Section 6.1.5 Reduction			15
* First 3,000sf of non-residential space in mixed-use buildings is exempt.			
Bicycle Parking Requirements			
<u>Use</u>	<u>Short-Term Parking</u>	<u>Long-Term Parking</u>	
Residential	4 spaces	56 spaces	
Retail	1 space	1 space	
Total Required Bicycle Parking	5	57	
Total Proposed Bicycle Parking	8	60	

The TDM measures that are proposed include unbundling parking (although clarification on how the parking spaces will be assigned is necessary), providing bicycle parking exceeding the requirement, improving walking conditions by reconstructing the sidewalk, providing an EV charging space, and including a car-sharing parking space. The applicant should provide an update on whether a car sharing company is interested in having a garage space. Comments regarding the bicycle parking are provided above. The suggestion to reconstruct the sidewalks and ramps on Lake Street and Massachusetts Avenue seems unnecessary as the area was reconstructed as part of the Massachusetts Avenue reconstruction. The sidewalk on Chandler Street should be reconstructed. Additionally, the bench proposed for replacement is new and may not need to be replaced. The inclusion of planters is a nice addition, but additional

consideration needs to be given to the human scale elements of the ground floor space.

The proposed project is highly accessible by transit, bike, and walking, and since there is a significant reduction in commercial space, it is likely that the aggregate number of trips to this location will be reduced as the Traffic Impact Analysis claims. However, in the Capitol Square business district there is no existing on-site public parking for these buildings, and it is assumed that the provided parking would be for residential tenants not for patrons of the commercial space. Currently, it is likely that most trips to this location are parking on-street on Massachusetts Avenue, Chandler Street, or another public street. As such, the actual impact of the current trips is dispersed across Massachusetts Ave and other streets.

Since a parking lot will be introduced to the site, many of the remaining trips estimated will directly come on-site to park. The Traffic Impact Analysis does not provide any traffic count data, but it is likely that more trips will happen via Chandler Street since that is how the parking lot will be accessed. While the total number of new trips on Chandler Street may not be very large in real terms, it may be perceived to be many in comparison to the existing traffic. Without any traffic data for Chandler Street, it is difficult to discern the impact.

The parking garage does provide the 24-foot aisle necessary for two-way traffic. One-way traffic through the property would be ideal, but an ingress or an egress on Lake Street is extremely close to the Lake Street and Massachusetts Avenue intersection where it might cause congestion and crashes at any already busy intersection. The Traffic Impact Analysis also fails to address the various ways to access Chandler Street. Due to the network of one-way streets and various turn restrictions, the only way to access the parking lot from Lake Street is from Brooks Avenue. There are a few options from Massachusetts Avenue, but each requires making a circuitous route driving down to Herbert Road and back up Chandler Street. It may be appropriate for the ARB to request a trip distribution analysis to assess how people will access this site. The Applicant may also want to report on how communication with the adjacent property owner to gain access rights to use the alleyway between the project site and 8 Lake Street.

Overall, the ARB may want more detailed information regarding circulation around the site to adequately assess the proposal.

5. EDR-5 Surface Water Drainage

Special attention shall be given to proper site surface drainage so that removal of surface waters will not adversely affect neighboring properties or the public storm drainage system. Available Best Management Practices for the site should be employed, and include site planning to minimize impervious surface and reduce clearing and re-grading. Best Management Practices may include erosion control and stormwater treatment by means of swales, filters, plantings, roof gardens,

native vegetation, and leaching catch basins. Stormwater should be treated at least minimally on the development site; that which cannot be handled on site shall be removed from all roofs, canopies, paved and pooling areas and carried away in an underground drainage system. Surface water in all paved areas shall be collected in intervals so that it will not obstruct the flow of vehicular or pedestrian traffic and will not create puddles in the paved areas. In accordance with Section 3.3.4., the Board may require from any Applicant, after consultation with the Director of Public Works, security satisfactory to the Board to ensure the maintenance of all stormwater facilities such as catch basins, leaching catch basins, detention basins, swales, etc. within the site. The Board may use funds provided by such security to conduct maintenance that the Applicant fails to do. The Board may adjust in its sole discretion the amount and type of financial security such that it is satisfied that the amount is sufficient to provide for any future maintenance needs.

The application materials, drainage summary letter, and site development plan show a new connection to carry roof runoff to the drainage system in the street. This is an improvement over the existing conditions. The proposed design complies with the Town's current stormwater bylaw. Final design materials must be submitted for review and approval by the Town Engineer.

6. EDR-6 Utilities Service

Electric, telephone, cable TV, and other such lines of equipment shall be underground. The proposed method of sanitary sewage disposal and solid waste disposal from all buildings shall be indicated.

All new utility service will be underground. The Board can find that this condition is met.

7. EDR-7 Advertising Features

The size, location, design, color, texture, lighting and materials of all permanent signs and outdoor advertising structures or features shall not detract from the use and enjoyment of proposed buildings and structures and the surrounding properties.

The application materials show representative signs on the commercial storefront. The applicant should submit specifications of this signage for the Board to assess. Additionally, lighting and any other potential outdoor features relative to the building should be provided.

8. EDR-8 Special Features

Exposed storage areas, exposed machinery installations, service areas, truck loading areas, utility buildings and structures, and similar accessory areas and structures shall be subject to such setbacks, screen plantings or other screening methods as shall reasonably be required to prevent their being incongruous with the existing or contemplated environment and the surrounding properties.

The roofing plan provided indicates that roof structures are appropriately set back and that a parapet and additional screening will provide screening of said structures. The site plan shows an enclosed dumpster and recycling area located in the garage parking. The existing businesses currently utilize on-street parking for truck loading and unloading and for service deliveries. The Board can find that this condition is met.

9. EDR-9 Safety

With respect to personal safety, all open and enclosed spaces shall be designed to facilitate building evacuation and maximize accessibility by fire, police and other emergency personnel and equipment. Insofar as practicable, all exterior spaces and interior public and semi-public spaces shall be so designed to minimize the fear and probability of personal harm or injury by increasing the potential surveillance by neighboring residents and passersby of any accident or attempted criminal act.

The proposed building has been designed to meet all relevant health and safety codes. A lighting plan was not provided as part of the plan set. These details are needed to assess safety criteria.

10. EDR-10 Heritage

With respect to Arlington's heritage, removal or disruption of historic, traditional or significant uses, structures or architectural elements shall be minimized insofar as practical whether these exist on the site or on adjacent properties.

The existing structure is not listed on the *Inventory of Historically or Architecturally Significant Properties in the Town of Arlington* nor is it under the jurisdiction of the Arlington Historical Commission. As such, the site contains no historic, traditional, or significant uses, structures, or architectural elements. The Board can find this condition is met.

11. EDR-11 Microclimate

With respect to the localized climatic characteristics of a given area, any development which proposes new structures, new hard surface, ground coverage or the installation of machinery which emits heat, vapor or fumes shall endeavor to minimize insofar as practicable, any adverse impacts on light, air and water resources or on noise and temperature levels of the immediate environment.

Based upon materials provided in the application, there will be no adverse impacts on air and water resources or on temperature levels of the immediate environment. While the owner states that they do not contemplate installation of machinery that emits heat, vapors, or fumes in connection with the proposed building, additional plan details are needed regarding lighting and emissions from machinery located on the roof to determine any impacts on the immediate environment. Mechanical specifications for the HVAC equipment should also be provided.

12. EDR-12 Sustainable Building and Site Design

Projects are encouraged to incorporate best practices related to sustainable sites, water efficiency, energy and atmosphere, materials and resources, and indoor environmental quality. Applicants must submit a current Green Building Council Leadership in Energy and Environmental Design (LEED) checklist, appropriate to the type of development, annotated with narrative description that indicates how the LEED performance objectives will be incorporated into the project.

The proposed building generates a LEED score that demonstrates the building could be LEED certified. We recommend that the proposed building aim to achieve higher LEED performance standards where possible, particularly in energy and atmosphere category. The Board can find that this condition is met.

IV. Findings

The following findings are for the Board's consideration:

1. The ARB finds that the project is consistent with Environmental Design Review per Section 3.4 of the Zoning Bylaw.
2. The ARB finds that the setbacks on Lake Street and Chandler Street are appropriate per Section 5.3.16.
3. The ARB finds that the five-story building will not adversely affect the adjacent R2 zoning districts per Section 5.3.19.
4. The ARB finds that the parking reduction and TDM measures justify the parking reduction per Section 6.1.5.

V. Conditions

A. General

1. The final design, sign, exterior material, landscaping, and lighting plans shall be subject to the approval of the Arlington Redevelopment Board or administratively approved by the Department of Planning and Community Development. Any substantial or material deviation during construction from the approved plans and specifications is subject to the written approval of the Arlington Redevelopment Board.
2. Any substantial or material deviation during construction from the approved plans and specifications is subject to the written approval of the Arlington Redevelopment Board.
3. The Board maintains continuing jurisdiction over this permit and may, after a duly advertised public hearing, attach other conditions or modify these conditions as it deems appropriate in order to protect the public interest and welfare.

4. Snow removal from all parts of the site, as well as from any abutting public sidewalks, shall be the responsibility of the owner and shall be accomplished in accordance with Town Bylaws.
5. Trash shall be picked up only on Monday through Friday between the hours of 7:00 am and 6:00 pm. All exterior trash and storage areas on the property, if any, shall be properly screened and maintained in accordance with Article 30 of Town Bylaws.
6. The Applicant shall provide a statement from the Town Engineer that all proposed utility services have adequate capacity to serve the development. The applicant shall provide evidence that a final plan for drainage and surface water removal has been reviewed and approved by the Town Engineer.
7. Upon installation of landscaping materials and other site improvements, the Applicant shall remain responsible for such materials and improvement and shall replace and repair as necessary to remain in compliance with the approved site plan.
8. All utilities serving or traversing the site (including electric, telephone, cable, and other such lines and equipment) shall be underground.
9. Upon the issuance of the building permit the Applicant shall file with the Building Inspector and the Department of Community Safety the names and telephone numbers of contact personnel who may be reached 24 hours each day during the construction period.
10. Building signage will be filed with and reviewed and approved by the Department of Planning and Community Development and Inspectional Services.

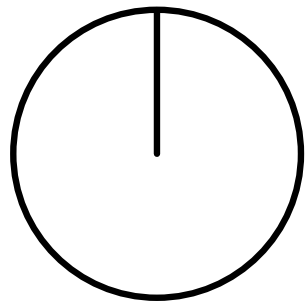
B. Special Conditions

1. The owner will work with the Department of Planning and Community Development to comply with all requirements of Section 8.2, Affordable Housing Requirements.
2. The affordable units must be equitably dispersed throughout the building and shall be comparable to market-rate units in terms of location, quality and character, room size, number of rooms, number of bedrooms, and external appearance.
3. An Affordable Housing Deed Restriction shall be executed with the Town prior to issuance of an Occupancy Permit for the eight affordable units.

4. No condominium conversion of said affordable rental units shall be permitted without the express permission of this Board. In the case of a proposed condominium conversion, Applicant shall work with the Department of Planning and Community Development to ensure that the units continue to meet the requirements of Section 8.2.



NOTE:
THE BUILDING AND LANDSCAPE SHADOWS ILLUSTRATED IN THE RENDERINGS BELOW ARE DIGITALLY GENERATED AND THEORETICAL REPRESENTATIONS OF THOSE SHADOWS CAST AT A SPECIFIC MOMENT IN TIME ON A SPECIFIC DAY. WHILE ACCURATE TO THE INPUT CALENDAR AND SUN LOCATION DATA, THE ACTUAL PERCEPTION OF SHADOWS INCLUDING THEIR SIZE, SHAPE AND INTENSITY OR DARKNESS, MAY BE SUBJECTIVE AND VARIABLE TO THE SPECIFIC OBSERVER. AS SUCH, THIS INFORMATION SHOULD BE UTILIZED AS GENERAL COMMENTARY, AND CAUSE FOR FURTHER DISCUSSION OR STUDY AS NEEDED.





TOWN OF ARLINGTON
REDEVELOPMENT BOARD

Application for Special Permit In Accordance with Environmental Design
Review Procedures (Section 3.4 of the Zoning Bylaw)

Docket No. _____

1. Property Address 190 & 192-200 Massachusetts Ave
Name of Record Owner(s) 190-200 Massachusetts Ave, LLC Phone 781-654-6306
Address of Owner 455 Massachusetts Ave, Ste 1, Arlington, MA 02474
Street City, State, Zip
2. Name of Applicant(s) (if different than above) Same as above
Address _____ Phone _____
Status Relative to Property (occupant, purchaser, etc.) _____
3. Location of Property Map 6, Block 3, Lots 1A and 1B
Assessor's Block Plan, Block, Lot No.
4. Deed recorded in the Registry of deeds, Book _____, Page _____;
-or- registered in Land Registration Office, Cert. No. 3413N, in Book 1362, Page 16.
1376 27
5. Present Use of Property (include # of dwelling units, if any) Retail, Service, Restaurant
6. Proposed Use of Property (include # of dwelling units, if any) Mixed-Use
37 Apartment Units & Retail
7. Permit applied for in accordance with _____ 3.4 _____ Environmental Design Review
the following Zoning Bylaw section(s) 5.5.2 _____ Dimensional and Density Regulations
SP _____ (Mixed-Use <=20,000SF)
section(s) title(s)
8. Please attach a statement that describes your project and provide any additional information that may aid the ARB in understanding the permits you request. Include any reasons that you feel you should be granted the requested permission.
See Attached

(In the statement below, strike out the words that do not apply)

The applicant states that 192-200 Massachusetts Ave, LLC is the owner -or- occupant -or- purchaser under agreement of the property in Arlington located at 190 & 192-200 Massachusetts Ave which is the subject of this application; and that unfavorable action -or- no unfavorable action has been taken by the Zoning Board of Appeals on a similar application regarding this property within the last two years. The applicant expressly agrees to comply with any and all conditions and qualifications imposed upon this permission, either by the Zoning Bylaw or by the Redevelopment Board, should the permit be granted.

Signature of Applicant(s)

Address

Phone



Town of Arlington Redevelopment Board
Application for Special Permit in accordance with
Environmental Design Review (Section 3.4)

Required Submittals Checklist

Two full sets of materials and one electronic copy are required. A model may be requested. Review the ARB's Rules and Regulations, which can be found at arlingtonma.gov/arb, for the full list of required submittals.

- X Dimensional and Parking Information Form (see attached)
- X Site plan of proposal
- N/A Model, if required
- X Drawing of existing conditions
- X Drawing of proposed structure
- X Proposed landscaping. May be incorporated into site plan
- X Photographs
- X Impact statement
- N/A Application and plans for sign permits
- X Stormwater management plan (for stormwater management during construction for projects with new construction)

FOR OFFICE USE ONLY

_____ Special Permit Granted	Date: _____
_____ Received evidence of filing with Registry of Deeds	Date: _____
_____ Notified Building Inspector of Special Permit filing	Date: _____

TOWN OF ARLINGTON REDEVELOPMENT BOARD

Petition for Special Permit under Environmental Design Review (see Section 3.4 of the Arlington Zoning Bylaw for Applicability)

For projects subject to Environmental Design Review, (see Section 3.4), please submit a statement that completely describes your proposal, and addresses each of the following standards.

1. **Preservation of Landscape.** The landscape shall be preserved in its natural state, insofar as practicable, by minimizing tree and soil removal, and any grade changes shall be in keeping with the general appearance of neighboring developed areas.
2. **Relation of Buildings to Environment.** Proposed development shall be related harmoniously to the terrain and to the use, scale, and architecture of existing buildings in the vicinity that have functional or visual relationship to the proposed buildings. The Arlington Redevelopment Board may require a modification in massing to reduce the effect of shadows on abutting property in an R0, R1 or R2 district or on public open space.
3. **Open Space.** All open space (landscaped and usable) shall be so designed as to add to the visual amenities of the vicinity by maximizing its visibility for persons passing the site or overlooking it from nearby properties. The location and configuration of usable open space shall be so designed as to encourage social interaction, maximize its utility, and facilitate maintenance.
4. **Circulation.** With respect to vehicular, pedestrian and bicycle circulation, including entrances, ramps, walkways, drives, and parking, special attention shall be given to location and number of access points to the public streets (especially in relation to existing traffic controls and mass transit facilities), width of interior drives and access points, general interior circulation, separation of pedestrian and vehicular traffic, access to community facilities, and arrangement of vehicle parking and bicycle parking areas, including bicycle parking spaces required by Section 8.13 that are safe and convenient and, insofar as practicable, do not detract from the use and enjoyment of proposed buildings and structures and the neighboring properties.
5. **Surface Water Drainage.** Special attention shall be given to proper site surface drainage so that removal of surface waters will not adversely affect neighboring properties or the public storm drainage system. Available Best Management Practices for the site should be employed, and include site planning to minimize impervious surface and reduce clearing and re-grading. Best Management Practices may include erosion control and storm water treatment by means of swales, filters, plantings, roof gardens, native vegetation, and leaching catch basins. Storm water should be treated at least minimally on the development site; that which cannot be handled on site shall be removed from all roofs, canopies, paved and pooling areas and carried away in an underground drainage system. Surface water in all paved areas shall be collected at intervals so that it will not obstruct the flow of vehicular or pedestrian traffic, and will not create puddles in the paved areas.

In accordance with Section 3.3.4, the Board may require from any applicant, after consultation with the Director of Public Works, security satisfactory to the Board to insure the maintenance of all storm water facilities such as catch basins, leaching catch basins, detention basins, swales, etc. within the site. The Board may use funds provided by such security to conduct maintenance that the applicant fails to do. The Board may adjust in its sole discretion the amount and type of financial security such that it is satisfied that the amount is sufficient to provide for the future maintenance needs.

6. **Utility Service.** Electric, telephone, cable TV and other such lines and equipment shall be underground. The proposed method of sanitary sewage disposal and solid waste disposal from all buildings shall be indicated.
7. **Advertising Features.** The size, location, design, color, texture, lighting and materials of all permanent signs and outdoor advertising structures or features shall not detract from the use and enjoyment of proposed buildings and structures and the surrounding properties. Advertising features are subject to the provisions of Section 6.2 of the Zoning Bylaw.

8. Special Features. Exposed storage areas, exposed machinery installations, service areas, truck loading areas, utility buildings and structures, and similar accessory areas and structures shall be subject to such setbacks, screen plantings or other screening methods as shall reasonably be required to prevent their being incongruous with the existing or contemplated environment and the surrounding properties.
9. Safety. With respect to personal safety, all open and enclosed spaces shall be designed to facilitate building evacuation and maximize accessibility by fire, police, and other emergency personnel and equipment. Insofar as practicable, all exterior spaces and interior public and semi-public spaces shall be so designed as to minimize the fear and probability of personal harm or injury by increasing the potential surveillance by neighboring residents and passersby of any accident or attempted criminal act.
10. Heritage. With respect to Arlington's heritage, removal or disruption of historic, traditional or significant uses, structures, or architectural elements shall be minimized insofar as practicable, whether these exist on the site or on adjacent properties.
11. Microclimate. With respect to the localized climatic characteristics of a given area, any development which proposes new structures, new hard-surface ground coverage, or the installation of machinery which emits heat, vapor, or fumes, shall endeavor to minimize, insofar as practicable, any adverse impact on light, air, and water resources, or on noise and temperature levels of the immediate environment.
12. Sustainable Building and Site Design. Projects are encouraged to incorporate best practices related to sustainable sites, water efficiency, energy and atmosphere, materials and resources, and indoor environmental quality. Applicants must submit a current Green Building Council Leadership in Energy and Environmental Design (LEED) checklist, appropriate to the type of development, annotated with narrative description that indicates how the LEED performance objectives will be incorporated into the project. [LEED checklists can be found at <http://www.usgbc.org/DisplayPage.aspx?CMSPageID=220b>]

In addition, projects subject to Environmental Design Review must address and meet the following Special Permit Criteria (see Section 3.3.3 of the Zoning Bylaw):

1. The use requested is listed as a special permit in the use regulations for the applicable district or is so designated elsewhere in this Bylaw.
2. The requested use is essential or desirable to the public convenience or welfare.
3. The requested use will not create undue traffic congestion or unduly impair pedestrian safety.
4. The requested use will not overload any public water, drainage or sewer system or any other municipal system to such an extent that the requested use or any developed use in the immediate area or in any other area of the Town will be unduly subjected to hazards affecting health, safety or the general welfare.
5. Any special regulations for the use as may be provided in this Bylaw are fulfilled.
6. The requested use will not impair the integrity or character of the district or adjoining districts, nor be detrimental to the health, morals, or welfare.
7. The requested use will not, by its addition to a neighborhood, cause an excess of the particular use that could be detrimental to the character of said neighborhood.

TOWN OF ARLINGTON

Dimensional and Parking Information
for Application to
The Arlington Redevelopment Board

Docket No. _____

Property Location 190 & 192-200 Massachusetts Ave

Zoning District B3

Owner: 192-200 Massachusetts Ave, LLC

Address: 455 Massachusetts Ave, Arlington, MA

Present Use/Occupancy: No. of Dwelling Units:

Retail, Service, Restaurant

Uses and their gross square feet:

1-Story 9,916 SF

Proposed Use/Occupancy: No. of Dwelling Units:

Mixed-Use, 37 Apartment Units & Retail

Uses and their gross square feet:

5-Story Mixed-Use

	Present Conditions	Proposed Conditions	Min. or Max. Required by Zoning for Proposed Use
Lot Size	11,134 SF	11,134 SF	min. ----
Frontage	102.1 FT	102.1 FT	min. 50 FT
Floor Area Ratio	0.9	4.1	max. 1.5
Lot Coverage (%), where applicable	N/A	N/A	max. ----
Lot Area per Dwelling Unit (square feet)	N/A	301 SF	min. ----
Front Yard Depth (feet)	0 FT	0 FT	min. 0 FT
Side Yard Width (feet) right side	0.6 FT	7.5 FT	min. 0 FT
left side	----	----	min. ----
Rear Yard Depth (feet)	----	----	min. (H+L)/6
Height	----	----	min. ----
Stories	1-STORY	5-STORY	stories 5-STORY
Feet	20 FT +/-	<60 FT	feet 60 FT
Open Space (% of G.F.A.)	----	----	min. ----
Landscaped (square feet)	97 SF/11,134 SF (lot area) → 0.9%	4.8 %	(s.f.) 10% 2,360 SF ← 1,125SF/23,600SF (Res. Floor Area)
Usable (square feet)	0 %	9.0 %	(s.f.) 20% 4,720 SF ← 23,600SF (Res. Floor Area) X 0.10 = 2,360 SF
Parking Spaces (No.)	None	15	min. 45 ← 23,600SF (Res. Floor Area) X 0.20 = 4,720SF
Parking Area Setbacks (feet), where applicable	0 FT	N/A	min. N/A ← 2,140 (deck space)/ 23,600SF (Res. Floor Area)
Loading Spaces (No.)	N/A	N/A	min. N/A
Type of Construction	NEW CONSTRUCTION		
Distance to Nearest Building	12.0 FT	19.2 FT	min.

TOWN OF ARLINGTON REDEVELOPMENT BOARD

Petition for Special Permit under Environmental Design Review (see Section 3.4 of the Arlington Zoning Bylaw for Applicability)

For projects subject to Environmental Design Review, (see section 3.4), please submit a statement that completely describes your proposal, and addresses each of the following standards.

1. **Preservation of Landscape.** The landscape shall be preserved in its natural state, insofar as practicable, by minimizing tree and soil removal, and any grade changes shall be in keeping with the general appearance of neighboring developed areas.

There will be landscaped areas on site as provided with respect to Applicant's plans.

2. **Relation of Buildings to Environment.** Proposed development shall be related harmoniously to the terrain and to the use, scale, and architecture of existing buildings in the vicinity that have functional or visual relationship to the proposed buildings. The Arlington Redevelopment Board may require a modification in massing so as to reduce the effect of shadows on abutting property in an RU, RI or R2 district or on public open space.

The proposed building would be related harmoniously to the terrain and to the use, scale, and architecture of the existing buildings in the vicinity that have functional or visual relationship to the proposed buildings as can be seen from the Applicant's plans along with the statements contained in the Environmental Impact Statement.

3. **Open Space.** All open space (landscaped and usable) shall be so designed as to add to the visual amenities of the vicinity by maximizing its visibility for persons passing the site or overlooking it from nearby properties. The location and configuration of usable open space shall be so designed as to encourage social interaction, maximize its utility, and facilitate maintenance.

There is essentially no open space at the site and the Applicant's plans would create some open space as set forth within the substance of the Environmental Impact Statement.

4. **Circulation.** With respect to vehicular, pedestrian and bicycle circulation, including entrances, ramps, walkways, drives, and parking, special attention shall be given to location and number of access points to the public streets (especially in relation to existing traffic controls and mass transit facilities), width of interior drives and access points, general interior circulation, separation of pedestrian and vehicular traffic, access to community facilities, and arrangement of vehicle parking and bicycle parking areas, including bicycle parking spaces required by Section 8.13 that are safe and convenient and, insofar as practicable, do not detract from the use and enjoyment of proposed buildings and structures and the neighboring properties.

The circulation is as shown on the Applicant's plans along with the bicycle parking areas and the vehicular parking spaces.

The parking areas are also shown on the plans and are mentioned in the Environmental Impact Statement. The Applicant proposes fifteen (15) parking spaces and also proposes an electric charging station, potential parking for a Zipcar vehicle which would benefit not only residents within the building but other residents in the Town who would want to use a Zipcar or a similar type of vehicle and bicycle parking both covered and uncovered as shown on the Applicant's plans.

5. **Surface Water Drainage.** Special attention shall be given to proper site surface drainage so that removal of surface waters will not adversely affect neighboring properties or the public storm drainage system. Available Best Management Practices for the site should be employed and include site planning to minimize impervious surface and reduce clearing and re-grading. Best Management Practices may include erosion control and storm water treatment by means of swales, filters, plantings, roof gardens, native vegetation, and leaching catch basins. Storm water should be treated at least minimally on the development site; that which cannot be handled on site shall be removed from all roofs, canopies, paved and pooling areas and carried away in an underground drainage system. Surface water in all paved areas shall be collected at intervals so that it will not obstruct the flow of vehicular or pedestrian traffic and will not create puddles in the paved areas.

In accordance with Section 3.3.4, the Board may require from any applicant, after consultation with the Director of Public Works, security satisfactory to the Board to insure the maintenance of all storm water facilities such as catch basins, leaching catch basins, detention basins, swales, etc. within the site. The Board may use funds provided by such security to conduct maintenance that the applicant fails to do. The Board may adjust in its sole discretion the amount and type of financial security such that it is satisfied that the amount is sufficient to provide for the future maintenance needs.

The Applicant's engineer and architect have provided information with respect to service water drainage in the report of Allen & Major Associates, Inc. which is part of the plans being submitted to the ARB.

Allen & Major Associates, Inc. reports indicates as follows:

"The project proposes to demolish a portion of the existing structure to construct a five story 9,764 square foot mixed-use building with apartment and retail uses.

There are fifteen (15) parking spaces on the first level.

The storm water management system will be improved with a new drainage pipe connected. The quantity of storm water runoff will be reduced with the installation of landscaped areas on site.

The proposed work will result in approximately 701 feet of impervious material being replaced with landscaped areas."

The balance of the Allen & Major Associates, Inc. report spells out the details with respect the Applicant's proposal regarding surface water drainage.

6. **Utility Service.** Electric, telephone, cable TV and other such lines and equipment shall be underground. The proposed method of sanitary sewage disposal and solid waste disposal from all buildings shall be indicated.

All utility service, electric, telephone, cable TV and other such lines and equipment will be underground, and the proposed method of sanitary sewage disposal and solid waste disposal are as indicated within the substance of the Applicant's plan.

7. **Advertising Features.** The size, location, design, color, texture, lighting and materials of all permanent signs and outdoor advertising structures or features shall not detract from the use and enjoyment of proposed buildings and structures and the surrounding properties. Advertising features are subject to the provisions of Section 6.2 of the Zoning Bylaw.

There are currently no plans for advertising features and once a determination has been made with respect to advertising it is expected any such issues could be handled administratively

through the Planning Department.

8. **Special Features.** Exposed storage areas, exposed machinery installations, service areas, truck loading areas, utility buildings and structures, and similar accessory areas and structures shall be subject to such setbacks, screen plantings or other screening methods as shall reasonably be required to prevent their being incongruous with the existing or contemplated environment and the surrounding properties.

All such areas are buffered and screened as shown on the Applicant's plans.

9. **Safety.** With respect to personal safety, all open and enclosed spaces shall be designed to facilitate building evacuation and maximize accessibility by fire, police, and other emergency personnel and equipment. Insofar as practicable, all exterior spaces and interior public and semi-public spaces shall be so designed as to minimize the fear and probability of personal harm or injury by increasing the potential surveillance by neighboring residents and passersby of any accident or attempted criminal act.

All open and enclosed spaces will be designated to facilitate building evacuation and maximize accessibility by fire, police and other emergency personnel and equipment as required.

10. **Heritage.** With respect to Arlington's heritage, removal, or disruption of historic, traditional, or significant uses, structures, or architectural elements shall be minimized insofar as practicable, whether these exist on the site or on adjacent properties.

There will be no removal of historical, traditional, or significant uses, structures, or architectural elements or in any case, if there is any impact on any such matters efforts shall be made to minimize as so far as practicable any effect on those matters, whether on site or on adjacent properties.

11. **Microclimate.** With respect to the localized climatic characteristics of a given area, any development which proposes new structures, new hard-surface ground coverage, or the installation of machinery which emits heat, vapor, or fumes, shall endeavor to minimize, insofar as practicable, any adverse impact on light, air, and water resources, or on noise and temperature levels of the immediate environment.

The Applicant does not anticipate installation of machinery which will emit unreasonable heat, vapor or fumes or have any adverse impact on light, air, and water resources, or on noise and temperature levels of the immediate environment.

12. **Sustainable Building and Site Design.** Projects are encouraged to incorporate best practices related to sustainable sites, water efficiency, energy and atmosphere, materials and resources, and indoor environmental quality. Applicants must submit a current Green Building Council Leadership in Energy and Environmental Design (LEED) checklist, appropriate to the type of development, annotated with narrative description that indicates how the LEED performance objectives will be incorporated into the project.
[LEED checklists can be found at <http://www.usgbc.org/DisplayPage.aspx?CMSPageID=220b>]

The Applicant has submitted a LEED checklist in connection with this matter.

In addition, projects subject to Environmental Design Review must address and meet the following Special Permit Criteria (see Section 3.3.3 of the Zoning Bylaw)

1. The use requested is listed in the Table of Use Regulations as a special permit in the district for which application is made or is so designated elsewhere in this Bylaw.

The use is listed as a Special Permit in the Use Regulations in the B3 District.

2. The requested use is essential or desirable to the public convenience or welfare.

The requested use is essential or desirable to the public convenience or welfare because the use would provide additional residential apartments in the Town which objectives are encouraged by the substance of the master plan and will also provide retail and/or restaurant space on the first level of the building which comports with the intent of the mixed-use portion of the Bylaw.

3. The requested use will not create undue traffic congestion, or unduly impair pedestrian safety.

It is not anticipated that there will be undue traffic congestion, or an impairment of pedestrian safety with respect to the proposal as indicated in the MDM Transportation Report.

4. The requested use will not overload any public water, drainage or sewer system or any other municipal system to such an extent that the requested use or any developed use in the immediate area or in any other area of the Town will be unduly subjected to hazards affecting health, safety, or the general welfare.]

The Applicant is providing 15 parking spaces and intends to contact a Zipcar type company for the purpose of determining whether a Zipcar vehicle could be located at the property which would benefit both residents of the building and other residents in the Town who would care to use a Zipcar type vehicle. There is also ample bicycle parking, both covered and uncovered, provided in the proposal for those individuals who do not own a car and those individuals would have nearby access to the bicycle path and would also have direct access to the MBTA and as is mentioned in the Environmental Impact Statement, many individuals now use Uber or Lyft for the purpose of satisfying their transportation needs.

5. Any special regulations for the use, set forth in Article 11, are fulfilled.

Any special regulations for the use, set forth in Article 11, are fulfilled.

6. The requested use will not impair the integrity or character of the district or adjoining districts, nor be detrimental to the health, morals, or welfare.

The substance of the Applicant's plans indicate that there will be no impairment of the integrity or character of the district or adjoining districts, nor be detrimental to the health, morals, or welfare

7. The requested use will not, by its addition to a neighborhood, cause an excess of that particular use that could be detrimental to the character of said neighborhood.

The requested use as mentioned in item No. 7 will not by its addition to the neighborhood in which the property is located cause an excess of that particular use that could be detrimental to the character of the neighborhood but rather will compliment other uses in the neighborhood and, as mentioned previously, provide additional residential apartment units and a retail and/or restaurant use, all of which will be in line with other uses in the neighborhood of the property.

190 & 192-200 Massachusetts Avenue

Arlington, MA

Environmental Impact Statement

The property located at 190 & 192-200 Massachusetts Avenue real estate is located in a B3 zone as defined with the Zoning Bylaw for the Town.

The Districts and Purposes provisions of the Zoning Bylaw in Section 5.5.1 further subsection D, provide the following with respect to a B3 zoning district:

"B3: Village Business District. The Village Business District's predominant uses include retail, service, and office establishments catering to both convenience and comparison-goods shoppers and oriented to pedestrian traffic. Mixed-use structures are allowed and encouraged in this district. The three locations include portions of the principal business areas of Arlington: Lake Street, Arlington Center, and Arlington Heights. Businesses which consume large amounts of land and activities which interrupt pedestrian circulation and shopping patterns or otherwise interfere with the intent of this bylaw are discouraged."

A mixed-use development is allowed in a B3 zone as contained in the 5-26 District & Uses section of the Zoning Bylaw.

The minimum lot frontage required is 50 feet, the front yard requirement is 0 and the side yard requirement is also 0.

The rear yard requirement is (H+L) 6. The landscaped open space and useable open space requirements are contained in Section 5-28 with a requirement of 10% for landscaped open space and Section 5.3.21 would be applicable with respect to a determination with regard to useable open space. See Dimensional form submitted by the Applicant in connection with its plan.

An apartment building is allowed in a B3 zoning district in accordance with Section 5-28 of the Zoning Bylaw.

Five (5) stories are allowed in the B3 zone in accordance with Section 5-29 and the Applicant's Dimensional form indicates that the height would be five (5) stories. There is also a limit of 60 feet in height for an apartment building in a B3 zone and the Applicant's plans will comply with that requirement.

The maximum floor area ratio or FAR is 1.50 in the B3 zone and the Applicant's plans do request an increase in the FAR premised upon the fact that the mixed-use bylaw does apply to its development proposal.

The Applicant's plans propose a combination of units with respect to its development i.e., retail/commercial as well as thirty-seven (37) residential apartment units.

Commercial/restaurant/retail space would be provided for on the first floor facing Massachusetts Avenue with podium parking in the back of the building consisting of fifteen (15) parking spaces.

Access to the site will be by way of a full access/egress driveway along Chandler Street as shown on the Allen & Major Associates, Inc. site layout.

Chandler Street is one way street in a northerly direction with traffic traversing Chandler Street heading up Chandler Street towards Massachusetts Avenue with access to Chandler Street being available off of Lake Street and the Brooks Ave intersection as well as Egerton Road.

The Applicant intends to have its traffic consultant participate in the Zoom Hearing for the purpose of providing information with respect to existing and proposed traffic conditions relating to Chandler Street as well as Massachusetts Avenue with respect to the volume of traffic coming from Chandler Street on to Massachusetts Avenue and the effect of the development on the traffic.

The apartment mix would consist of ten studios, twenty-three one-bedroom units and four two-bedroom units.

There would be an outdoor roof deck on the fourth story of the building to provide an amenity for the residential tenants.

The current building essentially has no open space, and the Applicant has attempted to create open space with respect to its plans and the roof deck would be an area that would provide useable open space.

The building is surrounded by three (3) streets and an alleyway and the building footprint takes up nearly the entire parcel with the result that there would be no extra space for other outdoor amenities.

Eight (8) of the residential units will be designated as affordable and the unit mix for those units includes: (1) two-bedroom unit, 4 (1) one-bedroom units and 3 studio units.

The Applicant's plans provide for short-term bicycle parking as well as indoor long-term secure bicycle parking.

There will be an electric charging station at the property and approaches will be made to a "Zipcar" company or a Zipcar like company to have a Zipcar or similar type car located at the property as the Applicant feels this would be an amenity for the building as well as other residents in the neighborhood of the property who would like to have use of a Zipcar type vehicle.

As can be seen from the Applicant's Dimensional form fifteen (15) parking spaces are being proposed and the Zoning Bylaw would require forty-five (45) parking spaces.

The Applicant's plans do not contemplate a satisfaction of the parking requirement contained in the Bylaw but would instead propose that the Zipcar approach, bicycle parking and the electric charging station to be provided at the property could be used for the purpose of gaining a reduction in the parking requirement as set forth within the provisions of Section 6.1.5, further subsection C of the Zoning Bylaw.

It is clear that many individuals now use Uber and Lyft for transportation purposes with the result that the Applicant suggests that the parking requirement can be modified because some individuals may not even own a motor vehicle while residing in the building and particularly so in light of the fact that the property is in close proximity to MBTA access areas.

In addition, it is equally clear that most of the restaurants and other uses in the area also do not satisfy the parking requirements contained in the Zoning Bylaw.

It would be impossible for most of the uses in the neighborhood of the property to satisfy the parking requirements as there is no land available for that purpose.

The Applicant has, through its architect, Market Square Architects PLLC, conducted solar studies as well as massing studies with respect to the property and the effect of the proposed construction on surrounding properties and buildings as can be seen from the Market Square Architects PLLC's solar comments. The proposed structure would only cast shadows on existing structures in the R2 zone during the evenings of winter months when long shadows are already cast by existing structures and foliage.

However, the Applicant will supplement the shadow study provided by spreading the study out over different times of the day and a representative of Market Square Architect PLLC will discuss how the shadow study was prepared and how the proposed development will not adversely impact neighborhood properties.

The studies indicate that properties on Cleveland Street are located farther from the boundary which triggers the height buffer contained in the Zoning Bylaw as shown on the Allen & Major Associates, Inc. diagram on FIG-01 with the result that no existing structure in an R2 zone is close enough to be impacted by a shadow emanating from the proposed building.

The massing study indicates that the proposed building exaggerates the upper story setback, minimizing the impact of the taller structure and creating a pedestrian friendly streetscape along Massachusetts Avenue which harmonizes with the massing of the adjacent existing structures i.e., Capital Theater, 2054 Massachusetts Avenue, and the Leader Bank Corporate Offices at 180 Massachusetts Avenue.

The massing study also concludes that utilizing the taller maximum height allowed would have a minimal impact on the nearby R2 lots.

All utilities will be located underground.

The storm water management report of Allen & Major Associates, Inc. suggests that the quantity of storm water runoff will be reduced with the installation of landscaped areas on site and that the steps taken to create the landscaped area will result in approximately 725 of impervious material being replaced with landscaped areas.

The table contained in the October 23, 2020 Allen & Major Associates, Inc. report identified as study point 1 i.e., flow to municipal system indicates that Article 15 of the Town Stormwater Mitigation Bylaw will not apply as the proposed development will introduce a reduction in impervious area. The report further indicates that the proposed landscaped areas for the project will reduce the runoff rates for all design storms by reducing the rate and volume of stormwater runoff from the site with the result that there will be a positive impact on the stormwater management system.

It is the position of the Applicant that the proposed building will not result in an increase in vehicular activity compared to the existing historic uses at the site.

The Transportation Management Report of MDM Transportation Consultants, Inc. dated September 21, 2020 indicates that implementation of access improvements, proposed pedestrian improvements, and a TDM will establish a framework for minimizing site traffic impacts and encourage non-motorized travel modes and pedestrian accommodations and will be compatible with the other projects in the area.

The Applicant has submitted a Traffic Study by MDM Transportation Consultants, Inc. dated December 21, 2020 which provides in part as follows:

- “Safety Characteristics. A review of the crash data indicated that no immediate safety countermeasures are warranted based on the crash history at the study intersections. Likewise, available sight lines at the site driveway intersection with Chandler Street will exceed the sight line requirements published by AASHTO.”
- “Public Transportation. The project is in close proximity to an extensive sidewalk system, three nearby multi-use paths (Minuteman Bikeway, Alewife Greenway Bike Path, and Alewife Linear Path), adjacent MBTA bus routes, and the nearby redline subway connections. A review of Census data for Arlington indicates alternative transportation (transit, walk, and bike) are available for use of 50% of the residents of the immediate study area (Census tract 3561).”
- “Reduced Trip Generation. Based on ITE methodology the proposed mixed-

use development is estimated to reduce peak hour trips by up to 25 vehicle trips and approximately 228 fewer vehicle trips on a weekday relative to existing/historic site uses.”

- “Qualitative Impact Assessment. the incremental traffic associated with the proposed development will result in a reduction in vehicular activity compared to the existing/historic uses; consequently, no material impact in operating conditions at the study intersections and area roadways is projected as a result of the redevelopment.”

The report is based upon the Applicant retaining approximately 1,735 + square feet of commercial space and construction of 37 residential apartments with access to the site by way of a full access/egress driveway along Chandler Street with off street parking for 15 vehicles.

While the traffic report discusses MTBA Route 79 which previously provided service between Arlington Heights and the Alewife Station *via* Massachusetts Avenue and Alewife Brook Parkway, that service has been suspended but the inclusion of information with respect to Route 79 does not change the conclusions of MDM with respect to its traffic report.

The Conclusion of MDM in the traffic study is as follows:

“In summary, access improvements, pedestrian/bicycle improvements, and TDM programs are outlined under *Recommendations and Conclusions*. These improvements will establish a framework of minimizing Site traffic impacts and encourage non-motorized travel modes and pedestrian accommodation that is compatible with other projects in the area.”

Bicycle travel will be encouraged with the Applicant's proposal and there will be secure, and weather protected indoor bicycle racks within the site containing 60 total spaces to facilitate this mode of transportation to and from the site by residents and building tenants and there will be additional short-term bicycle racks consisting of eight exterior spaces adjacent to the building as well.

A LEEDS project checklist has also been provided to the ARB in this filing.

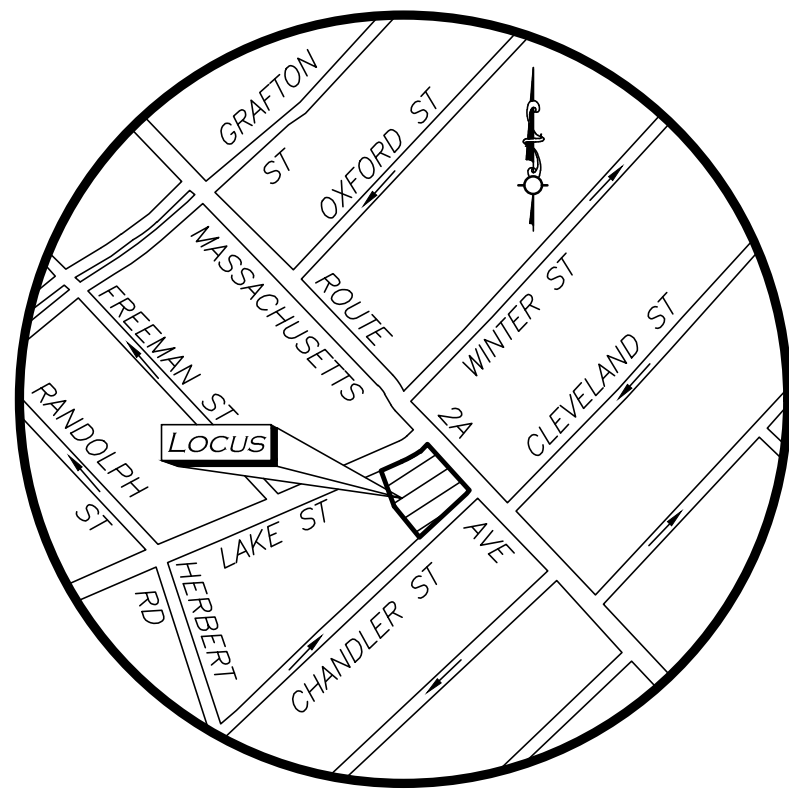
In summary, the proposed building is in harmony with other structures in the neighborhood of the property and will not have an adverse impact on nearby

properties with respect to shadow effects and massing and, on the other hand, will provide needed residential apartment units in the Town, while also providing for restaurant/retail space at the first level of the building which conforms to the intent of the mixed-use portion of the Zoning Bylaw.

The Applicant and its representatives understand that their proposal will represent a change to the neighborhood in which the property is located and, to that extent, creating a development plan for the site is challenging.

The plans submitted are a proposal to the Members of the Arlington Redevelopment Board and the Applicant fully expects comments from the Members with respect to the design aspects of the project and indeed invites those comments with a view toward coming up with a development that makes sense not only for the Town but also for the property owner who of course will be spending the money to develop the site.

The Applicant has also reached out to abutters and neighbors to the property for the purpose of alerting them to the development plans and invites comments from those individuals and entities as well.



LOCUS MAP
NOT TO SCALE

SITE DEVELOPMENT PLAN SET

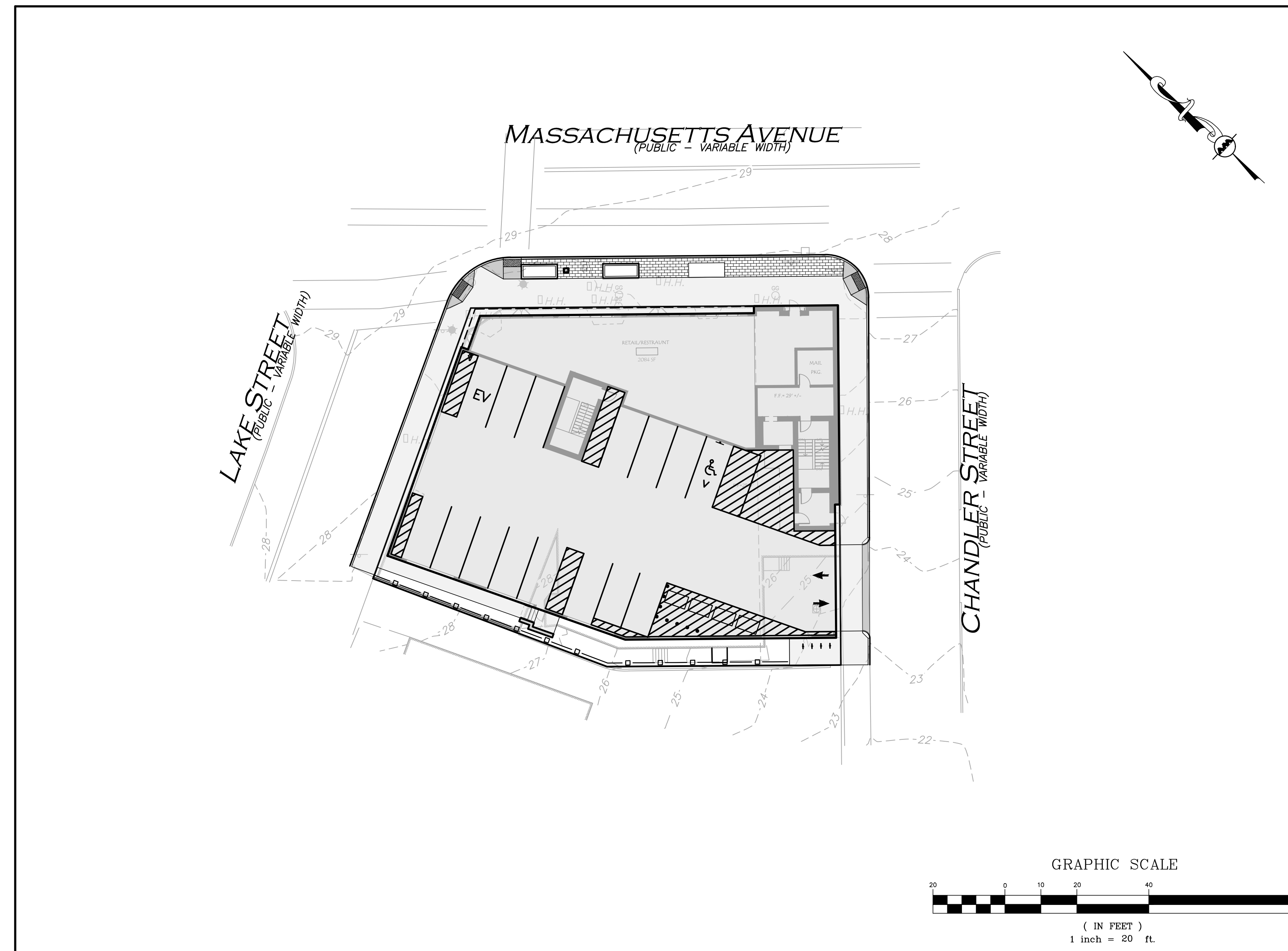
190 & 192-200 MASSACHUSETTS AVE

ARLINGTON, MA 02476

APPLICANT:
192-200 MASSACHUSETTS AVE, LLC
452 MASSACHUSETTS AVE, STE 1
ARLINGTON, MA 02474

ARCHITECT:
MARKET SQUARE ARCHITECTS
104 CONGRESS STREET, STE 203
PORTSMOUTH, NH 03801
(603) 501-0202

**CIVIL ENGINEER, LANDSCAPE ARCHITECT &
LAND SURVEYOR:**
ALLEN & MAJOR ASSOCIATES, INC.
100 COMMERCE WAY, SUITE 5
WOBURN, MA 01801
(781) 985-6889



LIST OF DRAWINGS			
DRAWING TITLE	SHEET	ISSUED	REVISED
EXISTING CONDITIONS	V-101	10/23/2020	-
SITE PREPARATION PLAN	C-101	03/10/2021	-
LAYOUT & MATERIALS PLAN	C-102	03/10/2021	-
GRADING & DRAINAGE PLAN	C-103	03/10/2021	-
UTILITIES PLAN	C-104	03/10/2021	-
DETAILS	C-501	03/10/2021	-
DETAILS	C-502	03/10/2021	-
DETAILS	C-503	03/10/2021	-
LANDSCAPE PLAN	L-101	03/10/2021	-
LANDSCAPE DETAILS	L-501	03/10/2021	-

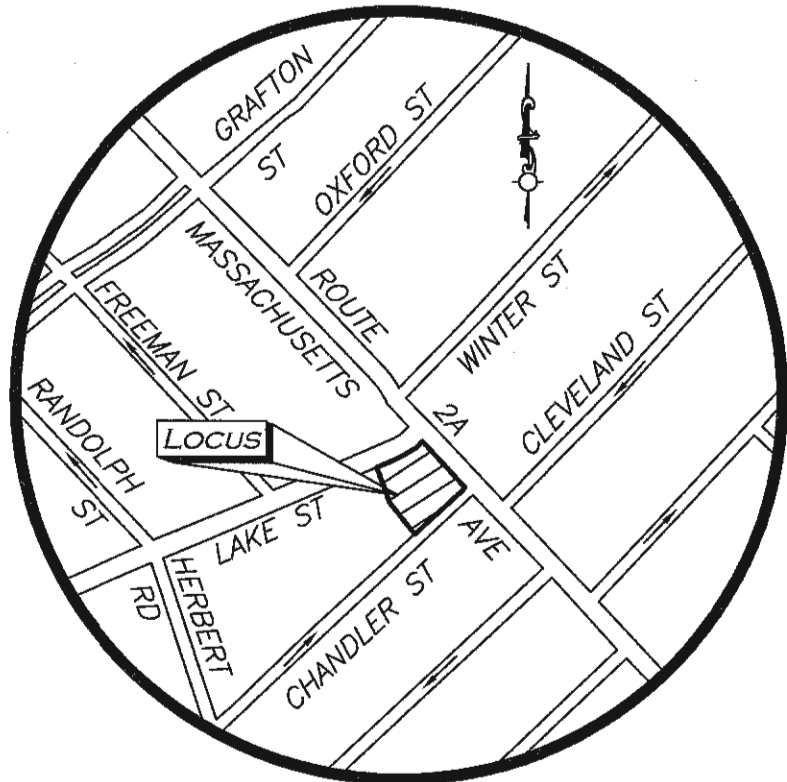


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ALLEN & MAJOR ASSOCIATES, INC.

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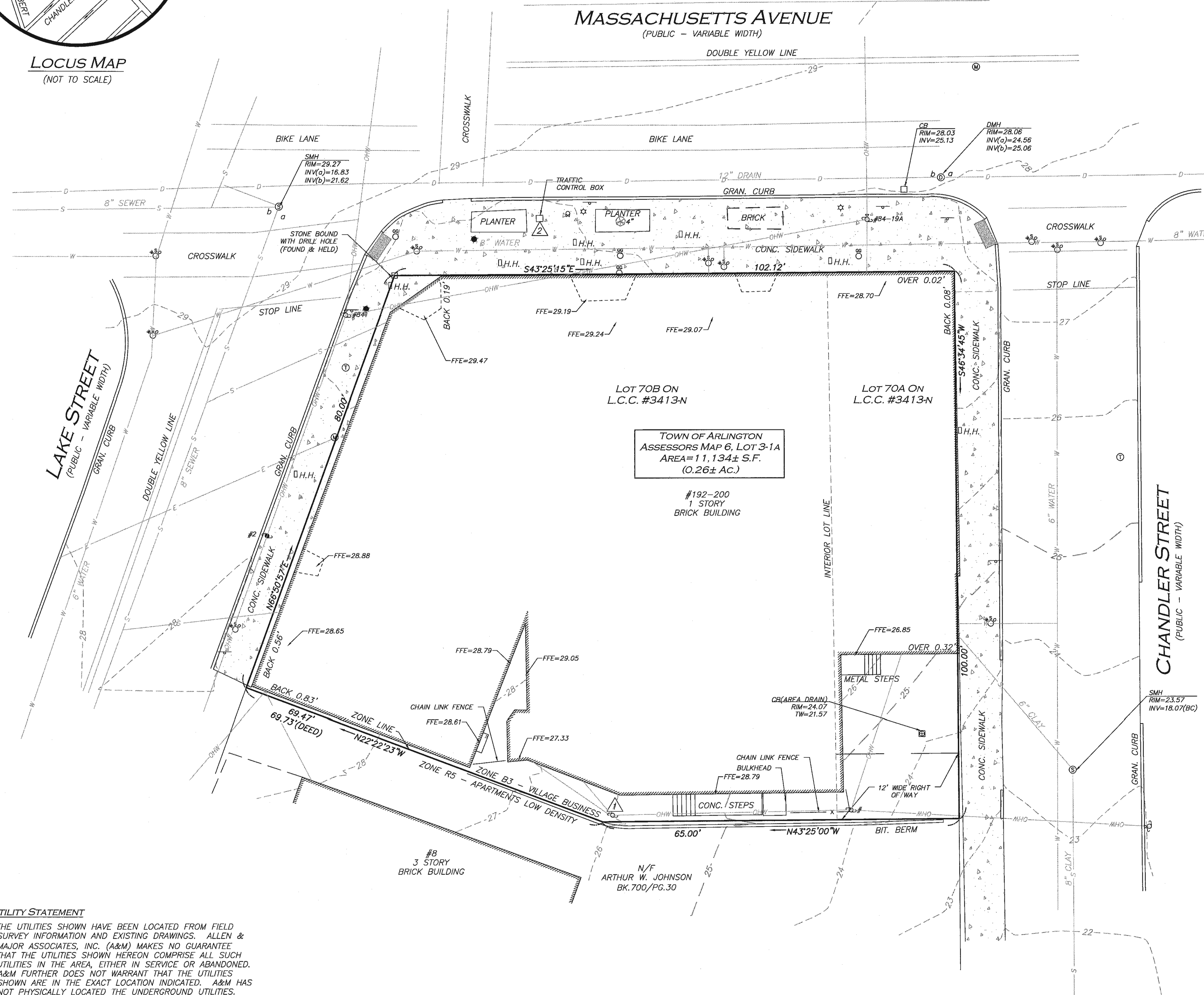
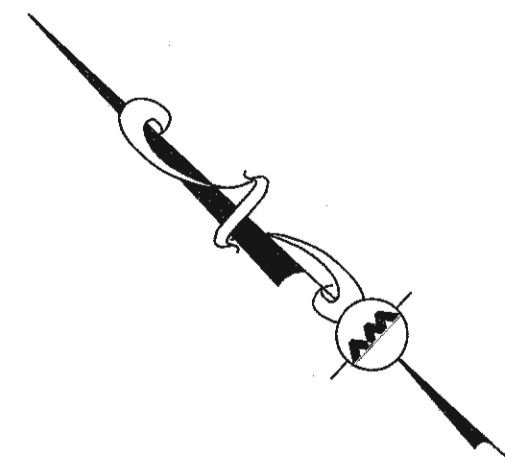
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ISSUED FOR ARB REVIEW: MARCH 10, 2021



LOCUS MAP
(NOT TO SCALE)

BENCHMARK SUMMARY		
TBM #	DESCRIPTION	ELEV.
1	COTTON GIN SPINDLE SET IN UTILITY POLE	28.96
2	CHISEL SQUARE ON CONCRETE BASE	29.24



LEGEND

STONE BOUND (SB)	□
DRAIN MANHOLE (DMH)	⊙
SEWER MANHOLE (SMH)	⊙
MISC. MANHOLE (MH)	⊙
TELEPHONE MANHOLE (TMH)	⊙
ROUND CATCH BASIN (RCB)	⊙
UTILITY POLE	⊙
UTILITY POLE W/LIGHT	⊙
UTILITY POLE W/RISE	⊙
WATER GATE	⊙
GAS GATE	⊙
HAND HOLE	⊙
TRAFFIC SIGNAL	⊙
LIGHT	⊙
TREE	⊙
SIGN	⊙
CONCRETE	⊙
BUILDING	⊙
BUILDING OVERHANG	⊙
PROPERTY LINE	⊙
CURB	⊙
CHAIN LINK FENCE	⊙
WATER LINE	⊙
SEWER LINE	⊙
DRAIN LINE	⊙
GAS LINE	⊙
ELECTRIC LINE	⊙
TELEPHONE LINE	⊙
OVERHEAD WIRES	⊙
FINISHED FLOOR ELEVATION	FFE
BITUMINOUS	BIT.
CONCRETE	CONC.
GRANITE	GRAN.
BOTTOM CENTER	(BC)
REINFORCED CONCRETE PIPE	RCP
POLYVINYL CHLORIDE PIPE	PVC
NOW OR FORMERLY	N/F
BOOK	BK.
PAGE	PG.
LAND COURT	L.C.
LAND COURT CASE	L.C.C.

LOCUS REFERENCES

- TOWN OF ARLINGTON ASSESSORS MAP 6, LOT 3-1A
- L.C. BOOK 1362, PAGE 16
- L.C. BOOK 1376, PAGE 27
- L.C.C. NO. 3413N
- RECORD OWNER: FRAMINA LLC

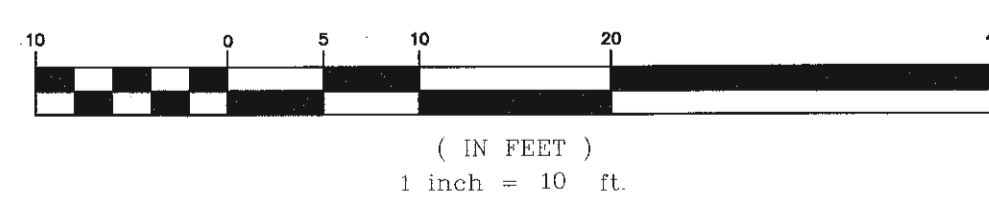
PLAN REFERENCES

- PLAN 542 OF 1986
- PLAN 320 OF 2012
- L.C.C. NO. 3413

NOTES

1. NORTH ARROW IS BASED ON MASSACHUSETTS GRID COORDINATE SYSTEM (MAINLAND ZONE) (NAD 83).
2. BOOK/PAGE AND PLAN REFERENCES ARE TAKEN FROM MIDDLESEX (SOUTH) REGISTRY OF DEEDS IN CAMBRIDGE, MA.
3. VERTICAL DATUM IS NAVD 88 ESTABLISHED USING RTK GPS OBSERVATION.
4. CONTOUR INTERVAL IS ONE FOOT (1').
5. THERE ARE NO STRIPED PARKING STALLS ON THE SUBJECT PREMISES.

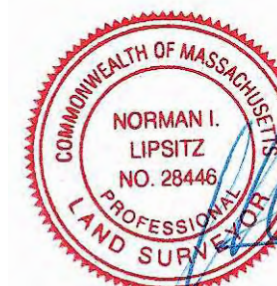
GRAPHIC SCALE



N:\PROJECTS\2729-02\SURVEY\DRAWINGS\CURRENT\5-2729-02-EC.DWG

WE HEREBY CERTIFY THAT THIS PLAN IS THE
RESULT OF AN ACTUAL ON THE GROUND
SURVEY PERFORMED ON AUGUST 4, 2020.

2023.000
PROFESSIONAL LAND SURVEYOR FOR
ALLEN & MAJOR ASSOCIATES, INC.



REV	DATE	DESCRIPTION
-----	------	-------------

APPLICANT/OWNER:
192-200 MASSACHUSETTS AVE LLC
455 MASSACHUSETTS AVENUE
SUITE 1
ARLINGTON, MA 02474

PROJECT:
190 & 192-200
MASSACHUSETTS AVENUE
ARLINGTON, MA

PROJECT NO. 2729-02 DATE: 10/22/20

SCALE: 1" = 10' DWG. NAME: 5-2729-02-EC

DRAFTED BY: AJR CHECKED BY: NIL

PREPARED BY:



ALLEN & MAJOR
ASSOCIATES, INC.

civil engineering • land surveying
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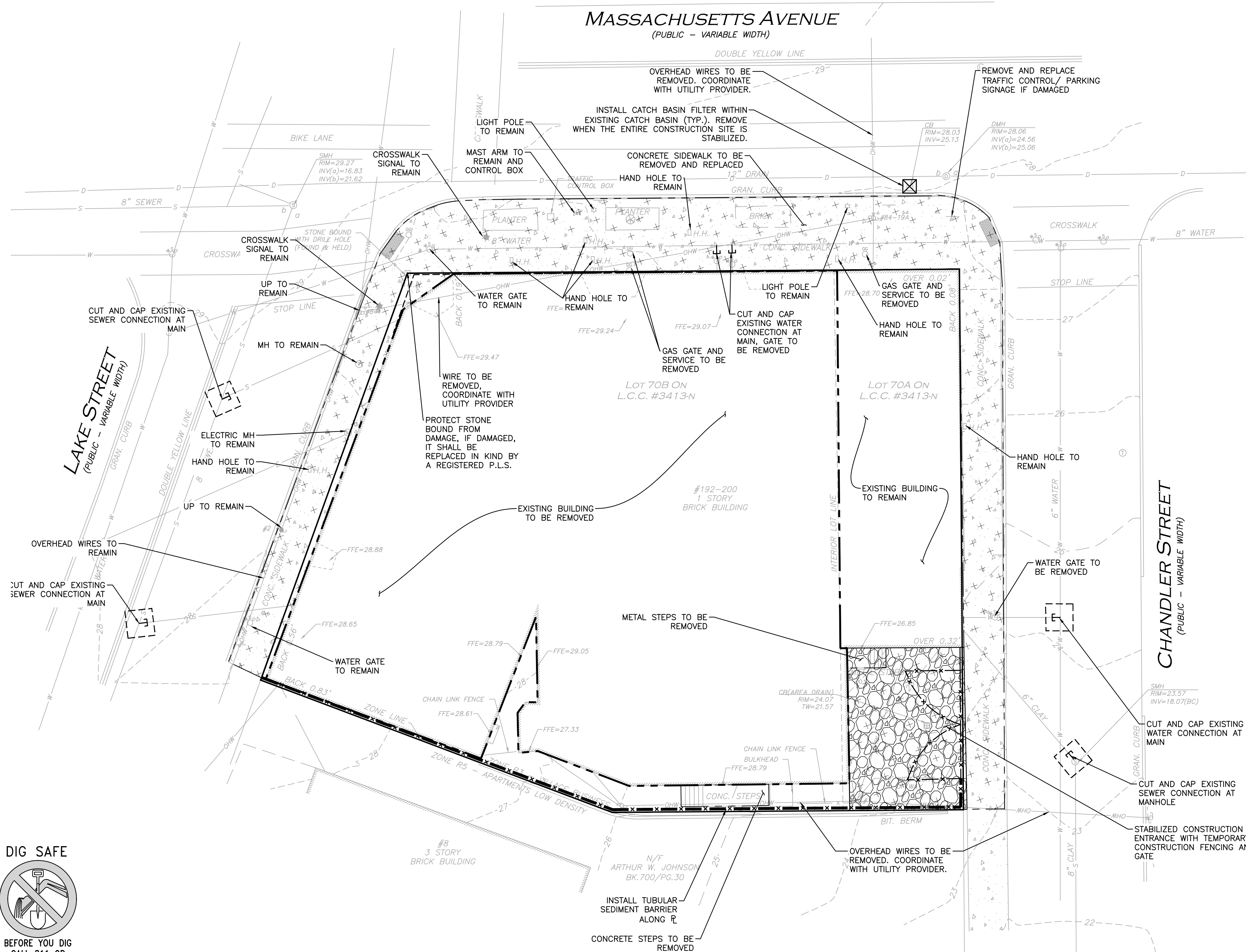
100 COMMERCE WAY
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DRAWING TITLE: EXISTING CONDITIONS SHEET NO. V-101

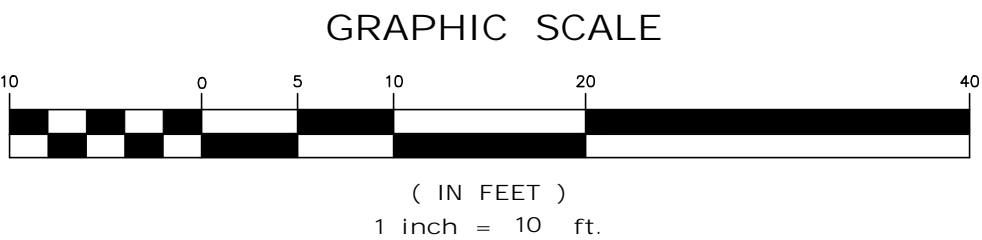
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LEGEND

TUBULAR BARRIER	— x — x —
CATCH BASIN FILTER	⊗
STABILIZED ENTRANCE	▨
STOCKPILE/STAGING AREA	▨
LIMIT OF DISTURBANCE	— · — · —
LIMIT OF 'CLEAR AND GRUB'	— · — · —
BUILDING TO BE REMOVED	— · — · —
PAVEMENT TO BE REMOVED	— · — · —
UTILITY CUT AND CAP	E
TEMPORARY FENCE	— x — x —

- SITE PREPARATION NOTES:**
- THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
 - THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY, AND "DIGSAFE" AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST EXACT FIELD LOCATION OF UTILITIES AND THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION TAKEN BEFORE PROCEEDING WITH THE WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
 - ALTHOUGH CERTAIN ITEMS HAVE BEEN NOTED ON THIS DRAWING FOR DEMOLITION, NO ATTEMPT HAS BEEN MADE TO DELINEATE EACH AND EVERY ITEM THAT REQUIRES DEMOLITION FOR THE COMPLETION OF THE PROJECT. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL NECESSARY DEMOLITION WORK TO COMPLETE THE PROJECT. ALLEN & MAJOR ASSOCIATES, INC. IS NOT RESPONSIBLE FOR SITE DEMOLITION ITEMS NOT SHOWN ON THE SURVEY, OR SPECIFICALLY NOTED. THE DEMOLITION NOTES AND ARROWS ON THIS PLAN ARE TYPICAL AND DO NOT REFLECT QUANTITY.
 - EXISTING WATER AND SEWER CONNECTIONS SHALL BE CUT AND CAPPED IN ACCORDANCE WITH THE TOWN OF ARLINGTON REQUIREMENTS.
 - THE INFORMATION SHOWN ON THIS PLAN IS THE SOLE PROPERTY OF ALLEN & MAJOR ASSOCIATES, INC. ITS INTENDED USE IS TO PROVIDE INFORMATION. ANY ALTERATION, MISUSE, OR RECALCULATION OF INFORMATION OR DATA WITHOUT THE EXPRESSED, WRITTEN CONSENT OF ALLEN & MAJOR ASSOCIATES, INC. IS STRICTLY PROHIBITED.
 - ALL INSTALLED CATCH BASINS AND AREA DRAINS SHALL HAVE A FILTER INSTALLED IMMEDIATELY, AND THE FILTER SHALL BE REMOVED WHEN THE ENTIRE SITE IS STABILIZED.



PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
1	03/10/2021	ISSUED FOR ARB REVIEW

APPLICANT/OWNER:
192-200 MASSACHUSETTS AVE, LLC
455 MASSACHUSETTS AVE, STE 1
ARLINGTON, MA 02474

PROJECT:
190 & 192-200
MASSACHUSETTS AVE
ARLINGTON, MA 02476

PROJECT NO. 2729-02 DATE: 10/23/2020

SCALE: 1" = 10' DWG. NAME: C2729-02

DESIGNED BY: ARM CHECKED BY: BDJ

PREPARED BY:

ALLEN & MAJOR ASSOCIATES, INC.
civil engineering • landscape architecture
environmental consulting • landscape architecture
www.allenmajor.com
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DRAWING TITLE:	SHEET No.
SITE PREPARATION PLAN	C-101

PARKING SUMMARY TABLE

USE	CALCULATION	MIN. REQUIRED	TOTAL PROPOSED
APARTMENT BUILDING	1 SPACES PER EFFICIENCY UNIT	10	5
	1 X 10 = 10 REQUIRED		
	1.15 SPACES PER 1 BED UNIT	27	7
	23 X 1.15 = 27 REQUIRED		
	1.5 SPACES PER 2 BED UNIT	8	3
	4 X 2 = 8 REQUIRED		
GENERAL RETAIL	1 PER 300 SF	N/A	N/A
	2,084 SF (UNDER 3,000 SF PARKING N/A)		
		45	15 *

PARKING TABLE NOTES:

1. SECTION 6.1.10, C. FOR A MIXED-USE DEVELOPMENT THE FIRST 3,000 SF OF NON-RESIDENTIAL SPACE IS EXEMPT FROM THE PARKING REQUIREMENTS OF THIS SECTION 6.1.
2. SECTION 6.1.11, STANDARD PARKING STALLS SHALL BE 8.5'X18', AND DRIVE AISLE WIDTH SHALL BE 24' FOR TWO-WAY TRAFFIC.

ADA RAMP WITH
DETECTABLE WARNING

BICYCLE PARKING SUMMARY TABLE

SHORT TERM BICYCLE PARKING (EXTERIOR)			
USE	CALCULATION	MIN. REQUIRED	TOTAL PROPOSED
APARTMENT BUILDING	0.1 PER UNIT	4	5
	$37 \times 0.1 = 3.7$ REQUIRED		
RETAIL SERVICE	0.6 PER 1,000 SF	1	3
	$1.7 \times 0.6 = 1.02$ REQUIRED		
TOTAL		5	8

USE	CALCULATION	MIN. REQUIRED	TOTAL PROPOSED
APARTMENT BUILDING	0.1 PER UNIT	4	5
	37 X 0.1 = 3.7 REQUIRED		
RETAIL SERVICE	0.6 PER 1,000 SF	1	3
	1.7 X 0.6 = 1.02 REQUIRED		
TOTAL		5	8

LONG TERM BICYCLE PARKING (INTERIOR)			
USE	CALCULATION	MIN. REQUIRED	TOTAL PROPOSED
APARTMENT BUILDING	1.5 PER UNIT	56	59
	$37 \times 1.5 = 55.5$ REQUIRED		
RETAIL SERVICE	0.1 PER 1,000 SF	1	1
	$2 \times 0.1 = 0.2$ REQUIRED		
TOTAL		57	60

USE	CALCULATION	MIN. REQUIRED	TOTAL PROPOSED
APARTMENT BUILDING	1.5 PER UNIT	56	59
	37 X 1.5 = 55.5 REQUIRED		
RETAIL SERVICE	0.1 PER 1,000 SF	1	1
	2 X 0.1 = 0.2 REQUIRED		
TOTAL		57	60

ZONING SUMMARY TABLE

B3-VILLAGE BUSINESS (MIXED-USE <=20,000SF)

ITEM	REQUIRED/ ALLOWED	EXISTING	PROPOSED
MINIMUM LOT AREA	N/A	11,134± SF	11,134± SF
MINIMUM LOT AREA PER UNIT	N/A	N/A	301± SF
MINIMUM FRONTAGE	50 FT	102.1± FT MASS AVE	102.1± FT MASS AVE
MINIMUM FRONT YARD SETBACK	0 FT	0 FT	0 FT
MINIMUM SIDE YARD SETBACK	0 FT	0.6 FT	7.5 FT
MINIMUM REAR YARD SETBACK	(H+L)/6	NO REAR	NO REAR
SCREENING BUFFER	7.5 FT ⁽³⁾	0.6 FT	7.5 ⁽³⁾
LANDSCAPED OPEN SPACE	10% ⁽²⁾	0.9%	4.8%*
USABLE OPEN SPACE	20% ⁽²⁾	0%	9.0%*
MAXIMUM HEIGHT	60 FT	20± FT	<60
MAXIMUM HEIGHT STORIES	5	1	5 ⁽¹⁾
FLOOR AREA RATIO	1.50	0.89	4.1*

ZONING TABLE NOTES:

1. SECTION 5.3.1.7, FOR BUILDING MORE THAN 3 STORIES IN HEIGHT, AN ADDITIONAL 7.5 FT STEP-BACK SHALL BE PROVIDED BEGINNING AT THE THIRD STORY LEVEL OR 30 FEET ABOVE GRADE, WHICHEVER IS LESS. ONE STEP-BACK SHALL BE PROVIDED ALONG ALL BUILDING ELEVATIONS WITH STREET FRONTAGE.
2. SECTION 5.3.21, SUPPLEMENTAL REQUIREMENTS IN THE BUSINESS AND INDUSTRIAL DISTRICTS, D. FOR MIXED USES AND ANY PERMITTED RESIDENTIAL USE NOT SPECIFICALLY IDENTIFIED IN THE TABLES IN SECTION 5.2, THE MINIMUM OPEN SPACE REQUIREMENTS (COMPUTED FROM THE RESIDENTIAL FLOOR AREA ONLY) SHALL BE 10% LANDSCAPED AND 20% USABLE IN THE B1, B2, B2A, B3, AND B4 DISTRICTS, AND 15 PERCENT USABLE IN THE B5 DISTRICT.
3. SECTION 5.3.21, SUPPLEMENTAL REQUIREMENTS IN THE BUSINESS AND INDUSTRIAL DISTRICTS, B5, ABUTTING RES 15' MINIMUM BUFFER. A SOLID WALL OR WOODEN FENCE MAY BE ABUTTING RES 10' ON HALF THE WIDTH OF THE LANDSCAPED BUFFER.
4. SECTION 5.3.19, REDUCED HEIGHT BUFFER. RELIEF REQUESTED FROM THE ARB TO PERMIT THE HIGHER PERMITTED HEIGHT OF 60 FT AND 5 STORIES.



APPLICANT/OWNER:
192-200 MASSACHUSETTS AV
455 MASSACHUSETTS AVE, S
ARLINGTON, MA 02474

PROJECT:

190 & 192-200
MASSACHUSETTS AV
ARLINGTON, MA 02476

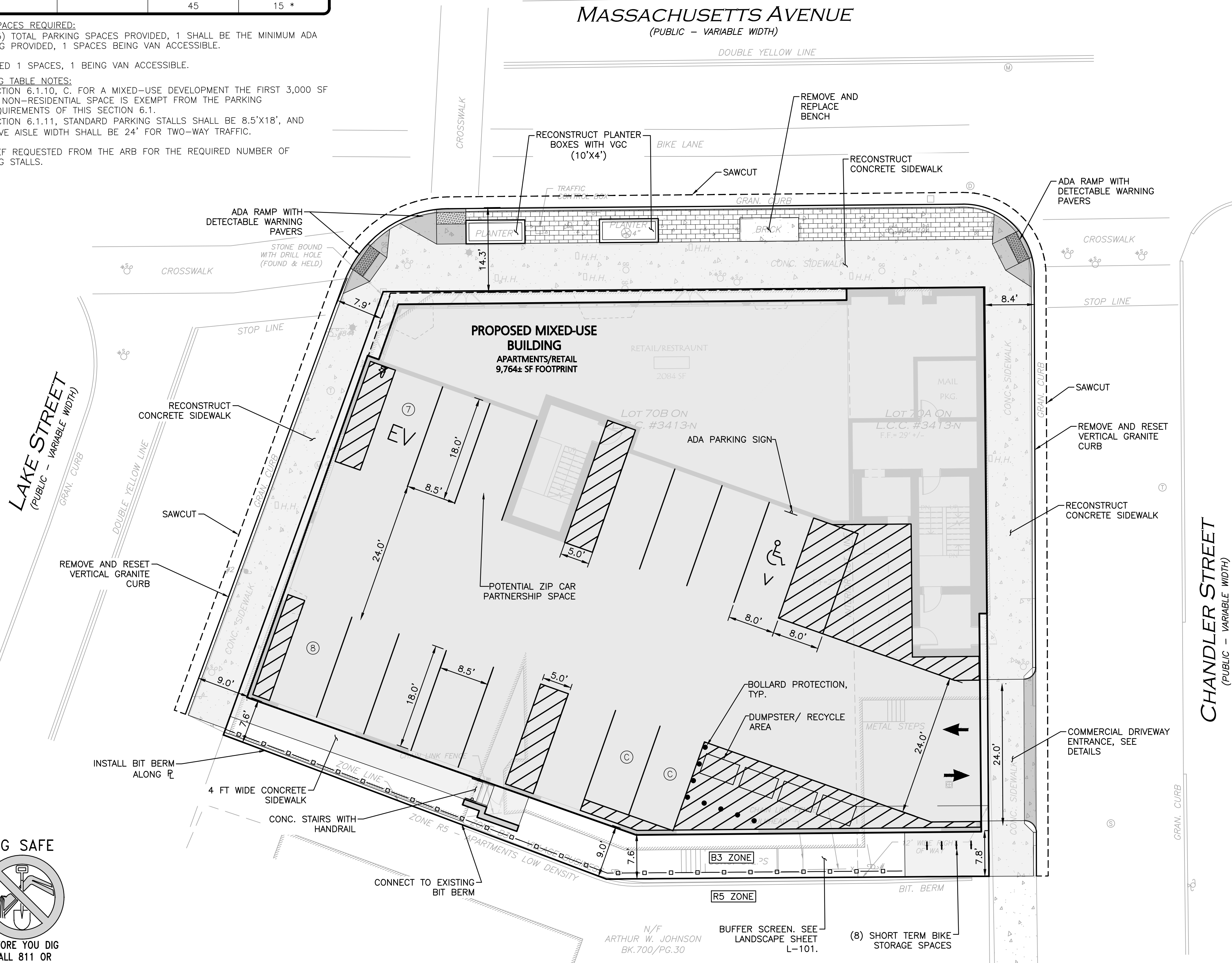
SCALE: 1" = 10' DWG. NAME: C2729-02

DESIGNED BY:	ARM	CHECKED BY:	BDJ
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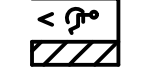

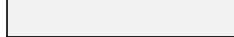






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DRAWING TITLE:	SHEET No.
LAYOUT & MATERIALS PLAN	C-102



LEGEND

PROP. PROPERTY LINE	
SIGN	
BOLLARD	
BUILDING	
BUILDING ARCHITECTURE	
BUILDING INTERIOR WALLS	
CURB	
PARKING STRIPING	
ROADWAY STRIPING	
SIDEWALK	
ADA ACCESSIBLE RAMP	
ADA DET. WARNING SURFACE	
SNOW STORAGE	
SAW-CUT LINE	
PARKING COUNT	
VINYL FENCE	

NOTES

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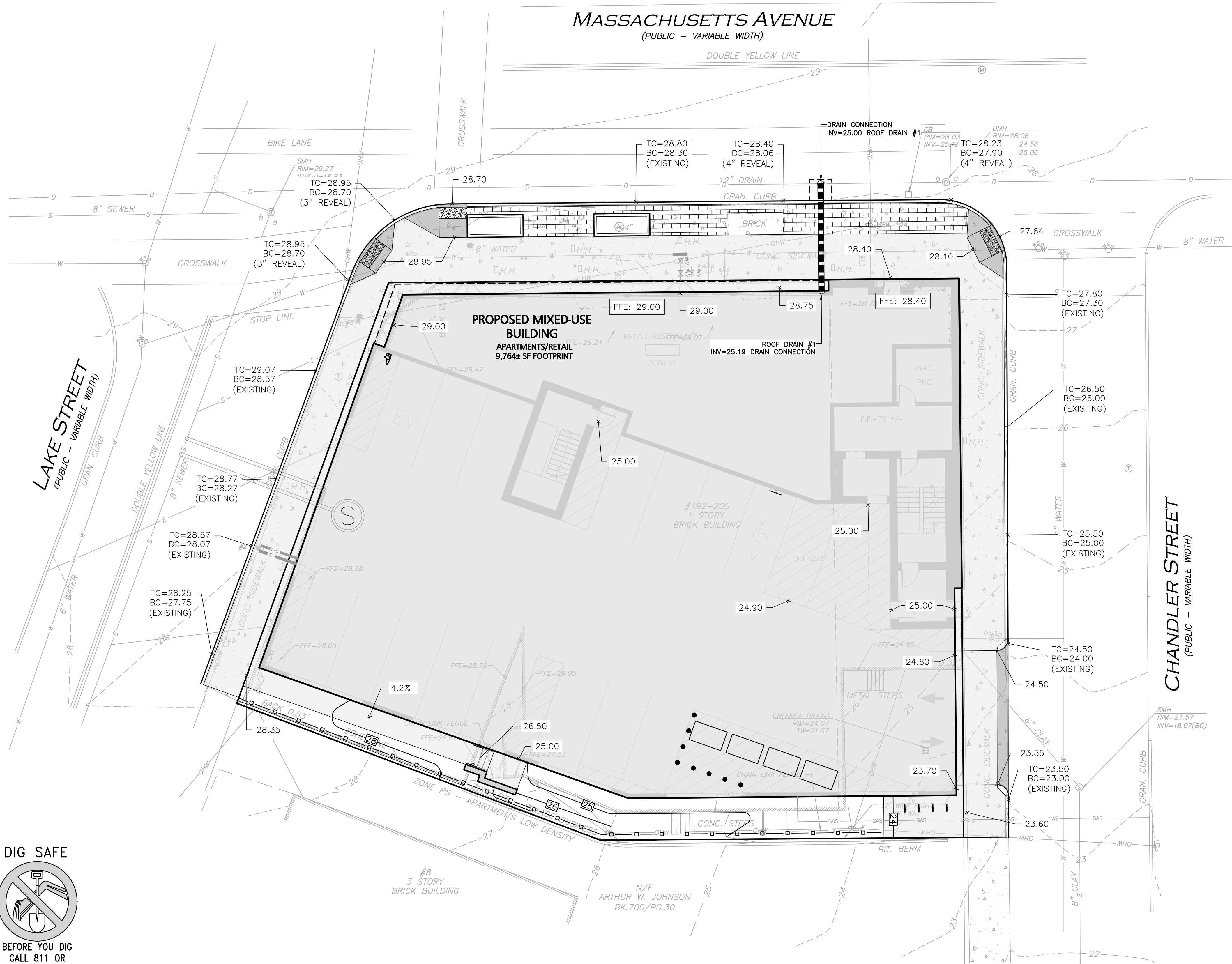
[illegible]

(IN FEET)
1 inch = 10 ft.



BEFORE YOU DIG
CALL 811 OR
1-888-DIG-SAFE
1-888-344-7233

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PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
1	03/10/2021	ISSUED FOR ARB REVIEW

APPLICANT/OWNER:

192-200 MASSACHUSETTS AVE, LLC
455 MASSACHUSETTS AVE, STE 1
ARLINGTON, MA 02474

PROJECT:

190 & 192-200
MASSACHUSETTS AVE
ARLINGTON, MA 02476

PROJECT NO. 2729-02 DATE: 10/23/2020

SCALE: 1" = 10' DWG. NAME: C2729-02

DESIGNED BY: ARM CHECKED BY: BDJ

PREPARED BY:

ALLEN & MAJOR ASSOCIATES, INC.
civil engineering • landscape architecture
environmental consulting • landscape architecture
www.allenmajor.com
100 COMMERCE WAY, SUITE 5
WOBURN MA 01801
TEL: (781) 935-6889
FAX: (781) 935-2896

WOBURN, MA • LAKEVILLE, MA • MANCHESTER, NH

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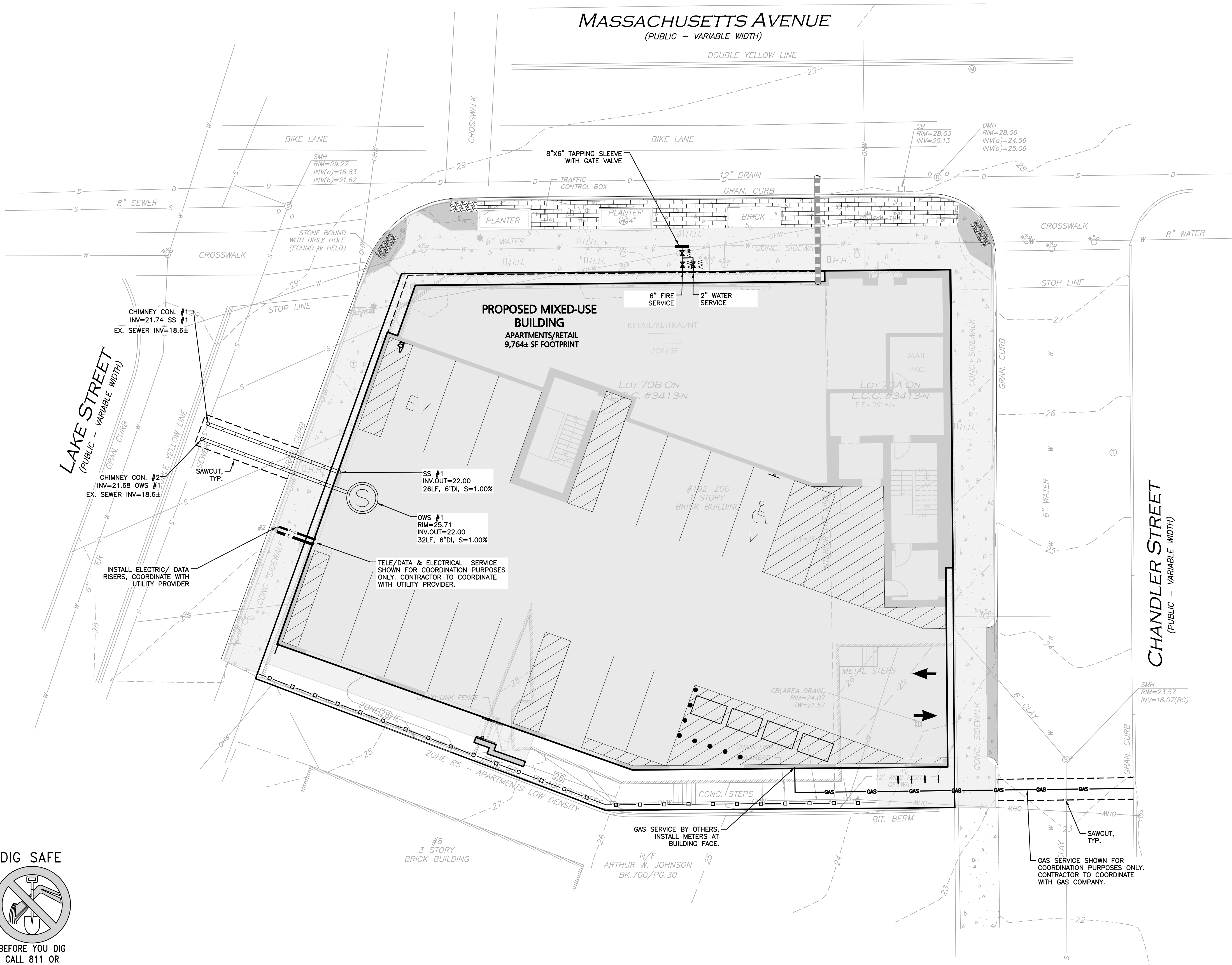
DRAWING TITLE:

GRADING & DRAINAGE PLAN

SHEET No.

C-103

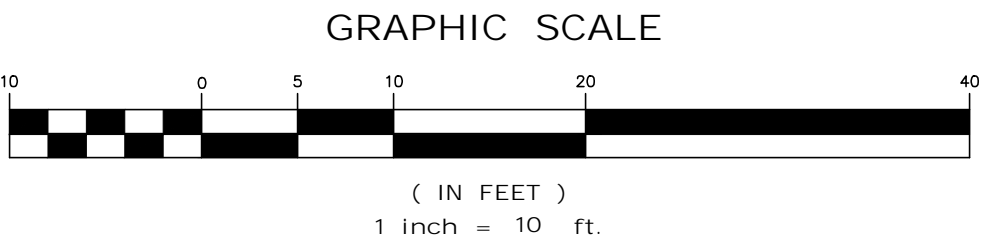
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LEGEND	
SEWER MANHOLE	⊙
SEWER CLEANOUT	⊙
SEWER VENT	⊙
SEWER LINE	—
WATER LINE	—W—
WATER (FIRE SERVICE)	—W-F—
WATER (DOMESTIC SERVICE)	—W-D—
WATER VALVE	WV
GAS LINE	—GAS—
GAS VALVE	GV
ELECTRICAL CONDUIT	—E—
TELE/CABLE CONDUIT	—C—

UTILITY NOTES:

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
2. A MINIMUM OF 18" VERTICAL CLEARANCE SHALL BE MAINTAINED WHERE WATER SERVICES CROSS STORM DRAIN AND SEWER LINES. WATER SERVICES SHALL BE ENCASED IN CONCRETE REGARDLESS OF CLEARANCE WHEN PASSING BELOW STORM DRAIN AND SEWER LINES. ENCASEMENT SHALL EXTEND ALONG WATER SERVICE A MINIMUM DISTANCE OF EIGHT FEET CENTERED ON THE CROSSING POINT OF THE OTHER PIPE AS MEASURED NORMALLY FROM ALL POINTS ALONG THE PIPE.
3. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION TAKEN BEFORE PROCEEDING WITH THE WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
4. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY, AND "DIGSAFE" AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST EXACT FIELD LOCATION OF UTILITIES AND THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION TAKEN BEFORE PROCEEDING WITH THE WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
5. THE INFORMATION SHOWN ON THIS PLAN IS THE SOLE PROPERTY OF ALLEN & MAJOR ASSOCIATES, INC. ITS INTENDED USE IS TO PROVIDE INFORMATION. ANY ALTERATION, MISUSE, OR RECALCULATION OF INFORMATION OR DATA WITHOUT THE EXPRESSED, WRITTEN CONSENT OF ALLEN & MAJOR ASSOCIATES, INC. IS STRICTLY PROHIBITED.



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PROJECT:
**190 & 192-200
MASSACHUSETTS AVE
ARLINGTON, MA 02476**

PROJECT NO.	2729-02	DATE:	10/23/2020
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SCALE:	1" = 10'	DWG. NAME:	C2729-02
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DESIGNED BY:	ARM	CHECKED BY:	BDJ
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PREPARED BY:

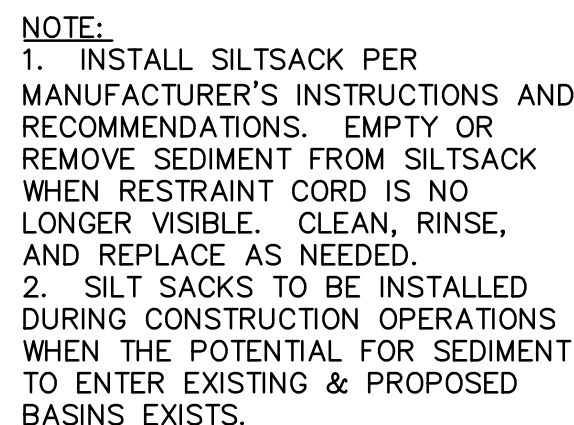
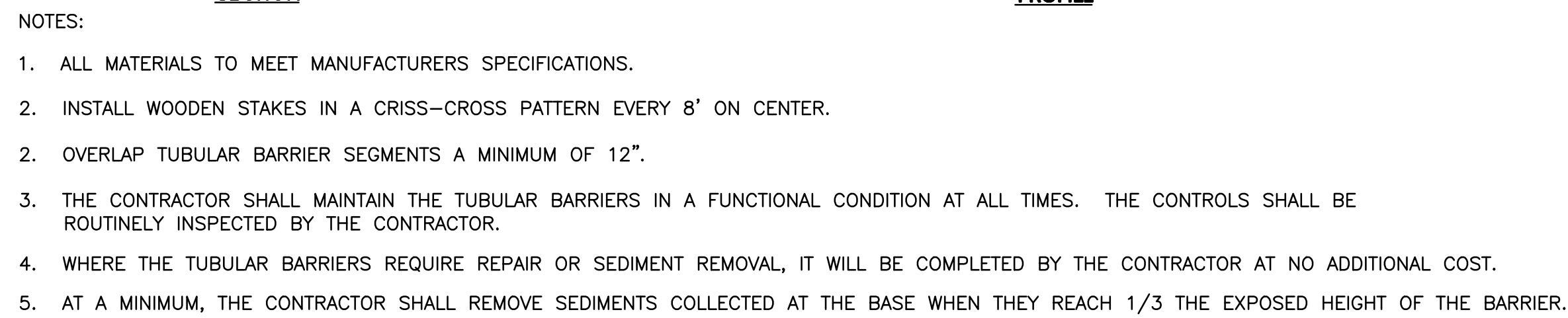
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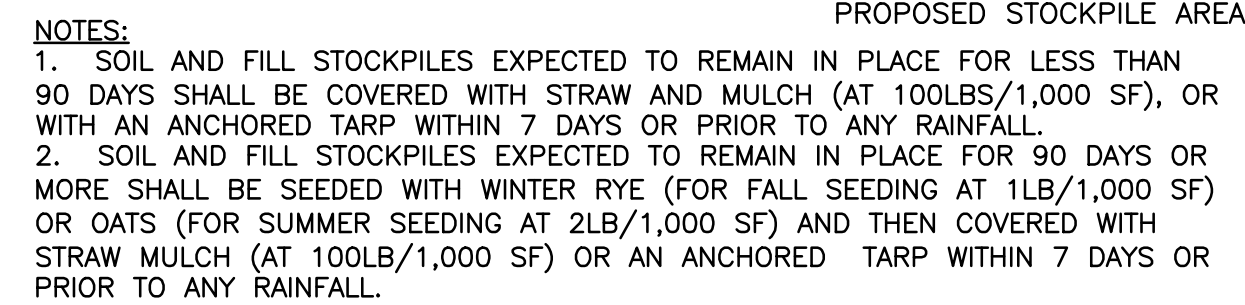
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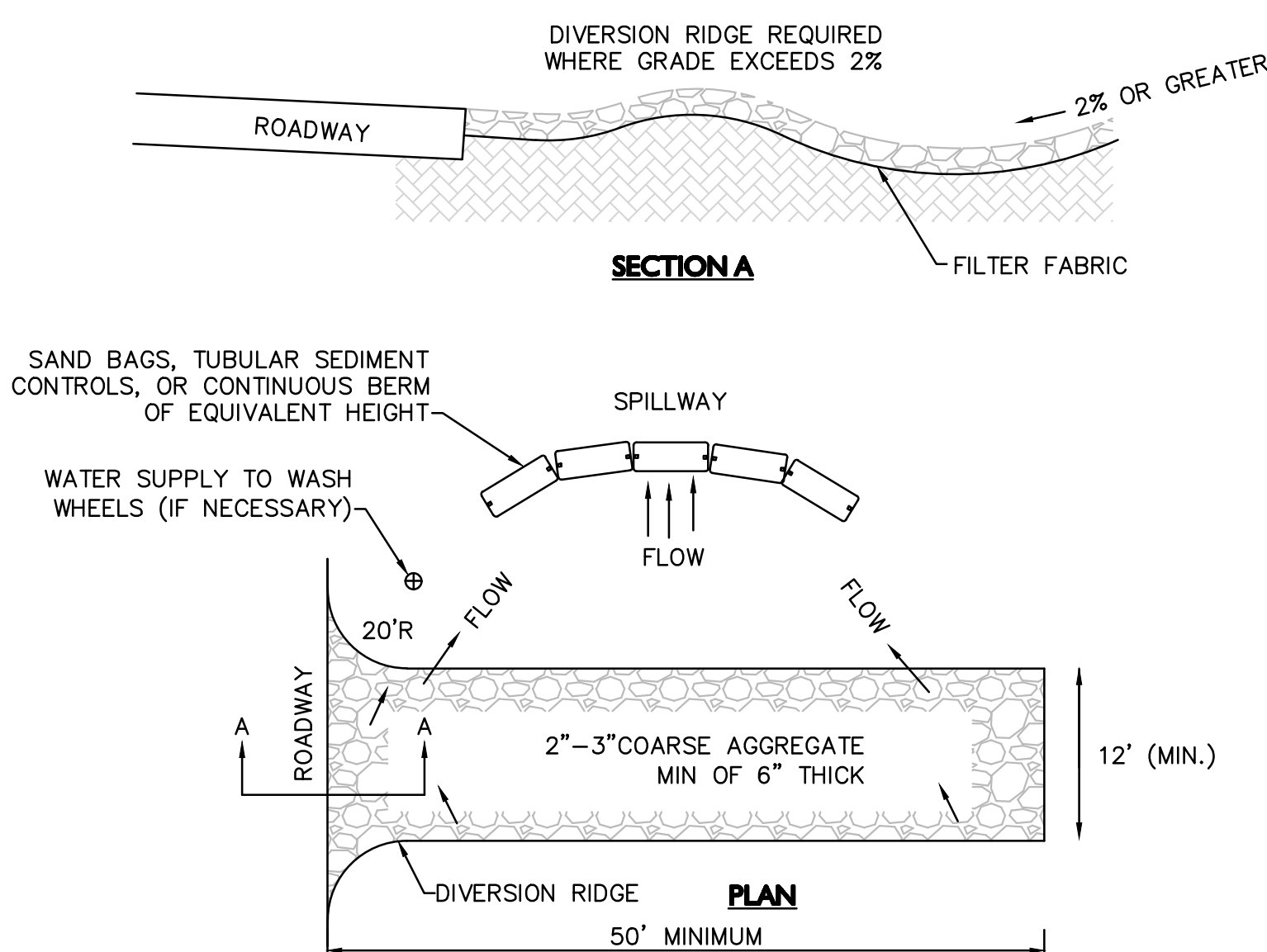
UTILITIES PLAN	C-104
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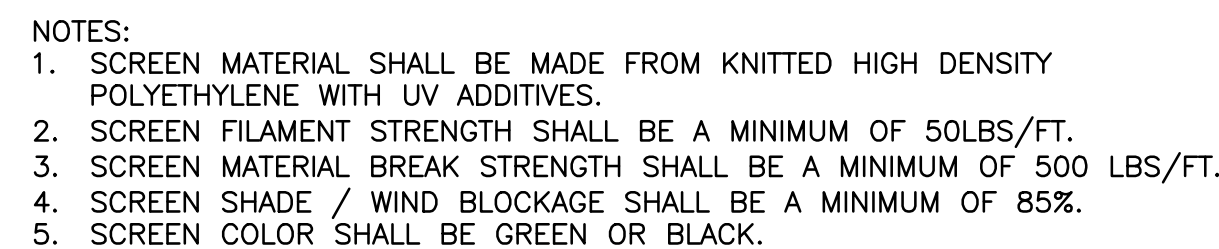
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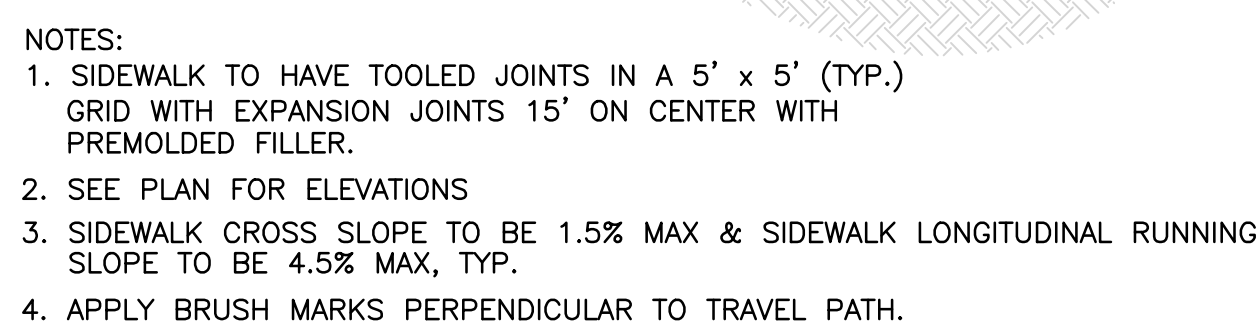
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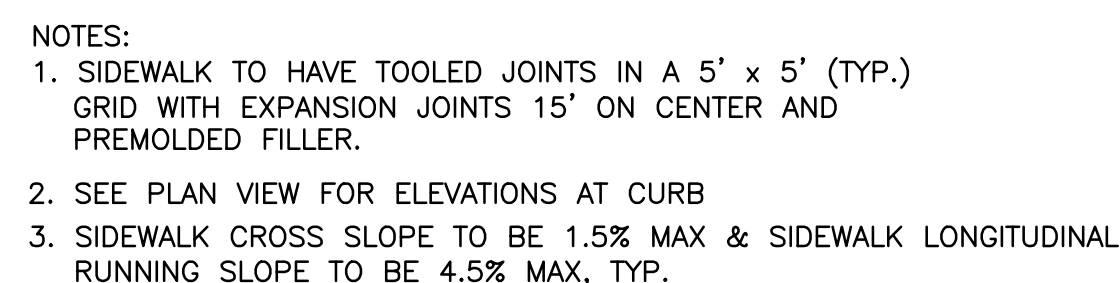
5



6



7



8

9)



10



APPLICANT\OWNER:

PROJECT: _____

SCALE: AS SHOWN DWG. NAME: C2729-01

PREPARED BY:	
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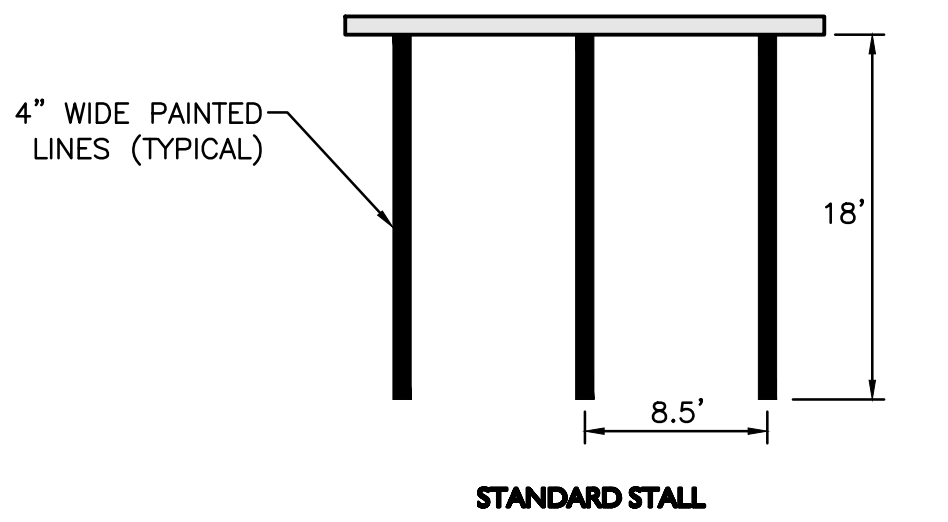


MODERN, MA : LAKEVILLE, MA : MANCHESTER, NH

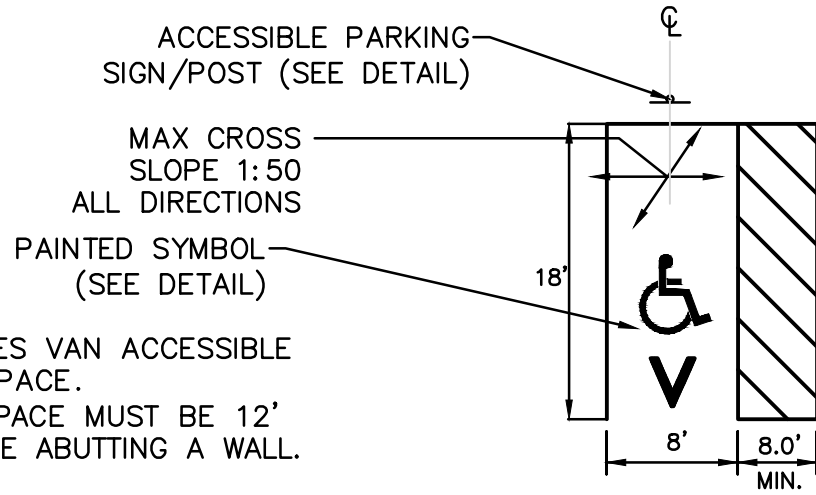
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DRAWING TITLE:	SHEET NO.:
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DETAILS	C-501
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STANDARD STALL

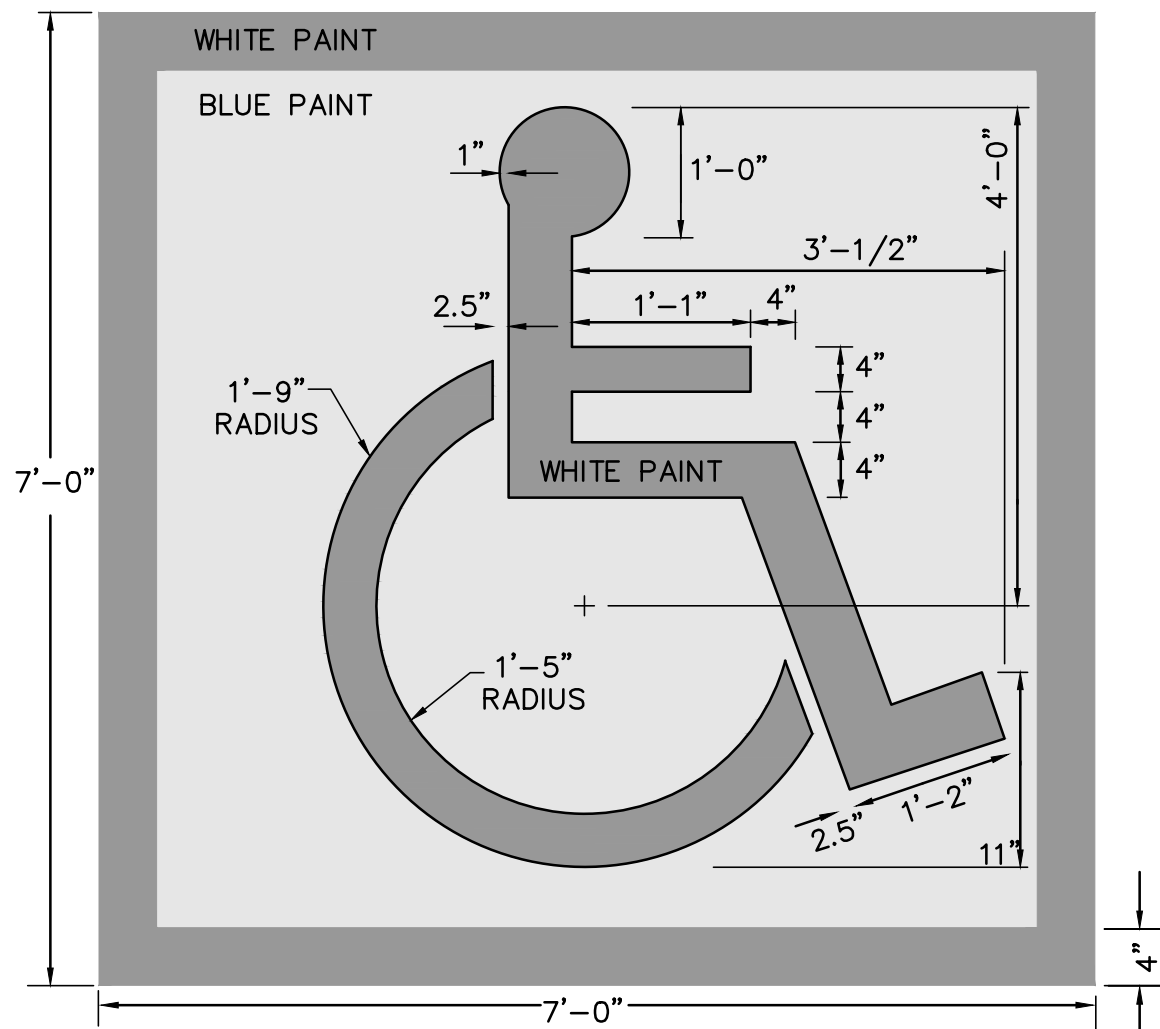


- NOTE:
1. "V" DENOTES VAN ACCESSIBLE PARKING SPACE.
 2. PARKING SPACE MUST BE 12' WIDE WHERE ABUTTING A WALL.

ADA AND STANDARD PARKING STRIPING

NOT TO SCALE

1



SYMBOL TO BE CENTERED ON WIDTH OF PARKING STALL. SYMBOL IS REQUIRED TO CONTRAST WITH BACKGROUND. USE WHITE ON BLUE (COLOR #105090 IN FEDERAL STANDARD 5952) DOUBLE COAT.

ACCESSIBLE PARKING STALL PAVEMENT MARKING

NOT TO SCALE

2

NOT USED

NOT TO SCALE

3

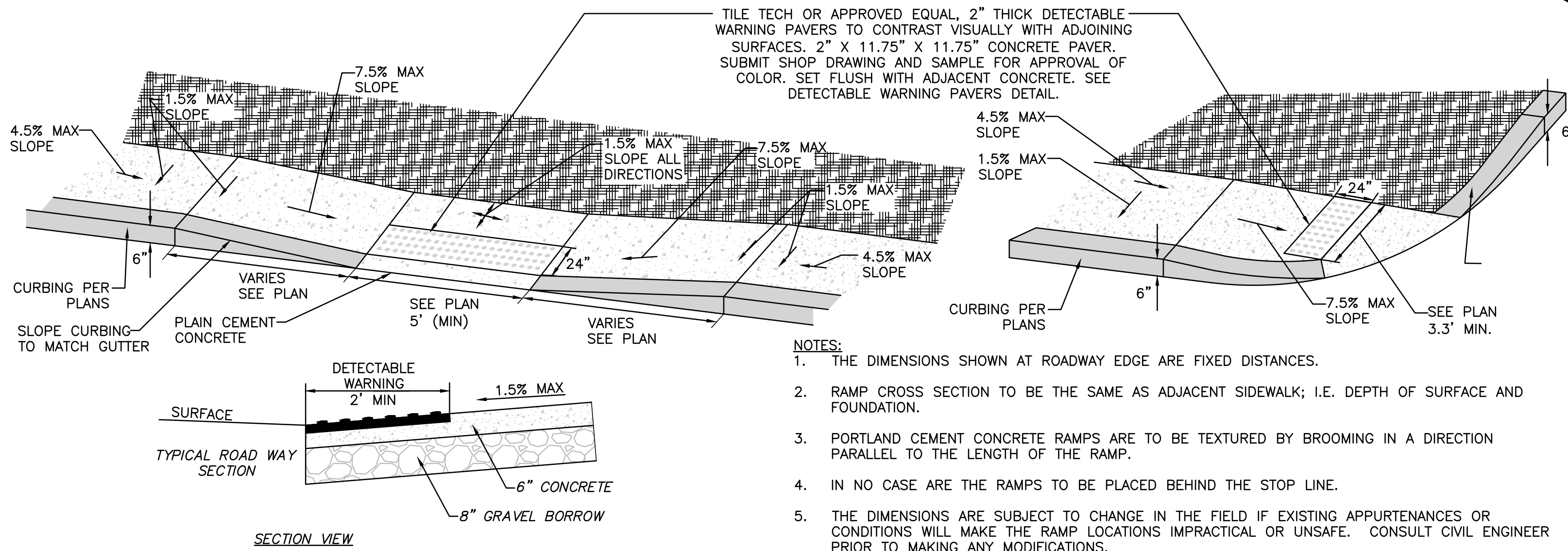
DESC.	SIGN	SIZE	MOUNTING HEIGHT	DESCRIPTION	REFLEC-TORIZED
R7-BM (MODIFIED)		12" x 26"	7' - 0"	WHITE TEXT ON BLUE FIELD WITH WHITE BORDER	YES

1. TRAFFIC AND SAFETY SIGNAGE SHALL COMPLY WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) STANDARDS.
2. MOUNTING HEIGHT IS DEFINED AS THE DISTANCE FROM THE BOTTOM OF THE SIGN TO THE NEAR EDGE OF THE PAVEMENT.

SIGN TABLE

NOT TO SCALE

4

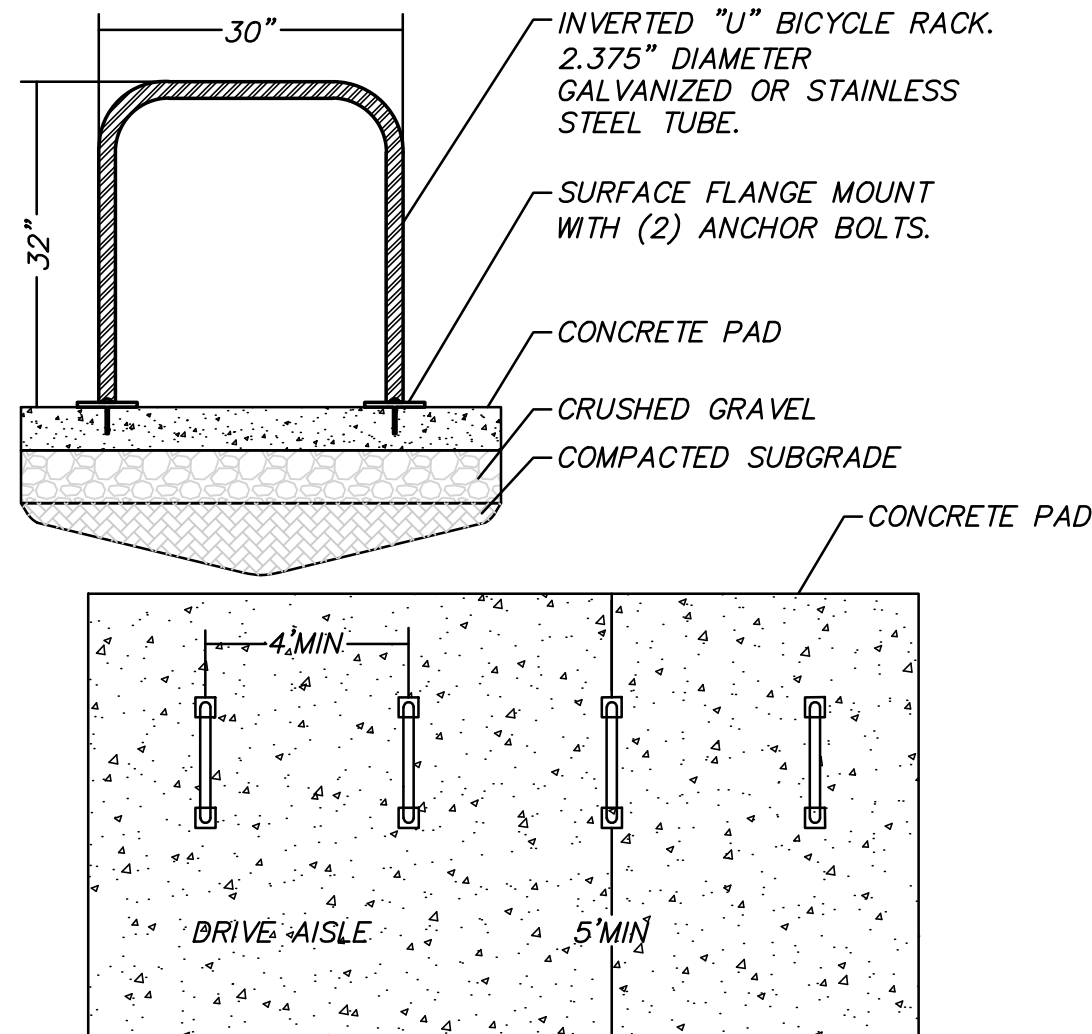


- NOTES:
1. THE DIMENSIONS SHOWN AT ROADWAY EDGE ARE FIXED DISTANCES.
 2. RAMP CROSS SECTION TO BE THE SAME AS ADJACENT SIDEWALK; I.E. DEPTH OF SURFACE AND FOUNDATION.
 3. PORTLAND CEMENT CONCRETE RAMPS ARE TO BE TEXTURED BY BROOMING IN A DIRECTION PARALLEL TO THE LENGTH OF THE RAMP.
 4. IN NO CASE ARE THE RAMPS TO BE PLACED BEHIND THE STOP LINE.
 5. THE DIMENSIONS ARE SUBJECT TO CHANGE IN THE FIELD IF EXISTING APPURTENANCES OR CONDITIONS WILL MAKE THE RAMP LOCATIONS IMPRACTICAL OR UNSAFE. CONSULT CIVIL ENGINEER PRIOR TO MAKING ANY MODIFICATIONS.

HANDICAP CURB CUT & CURB TRANSITION

NOT TO SCALE

5

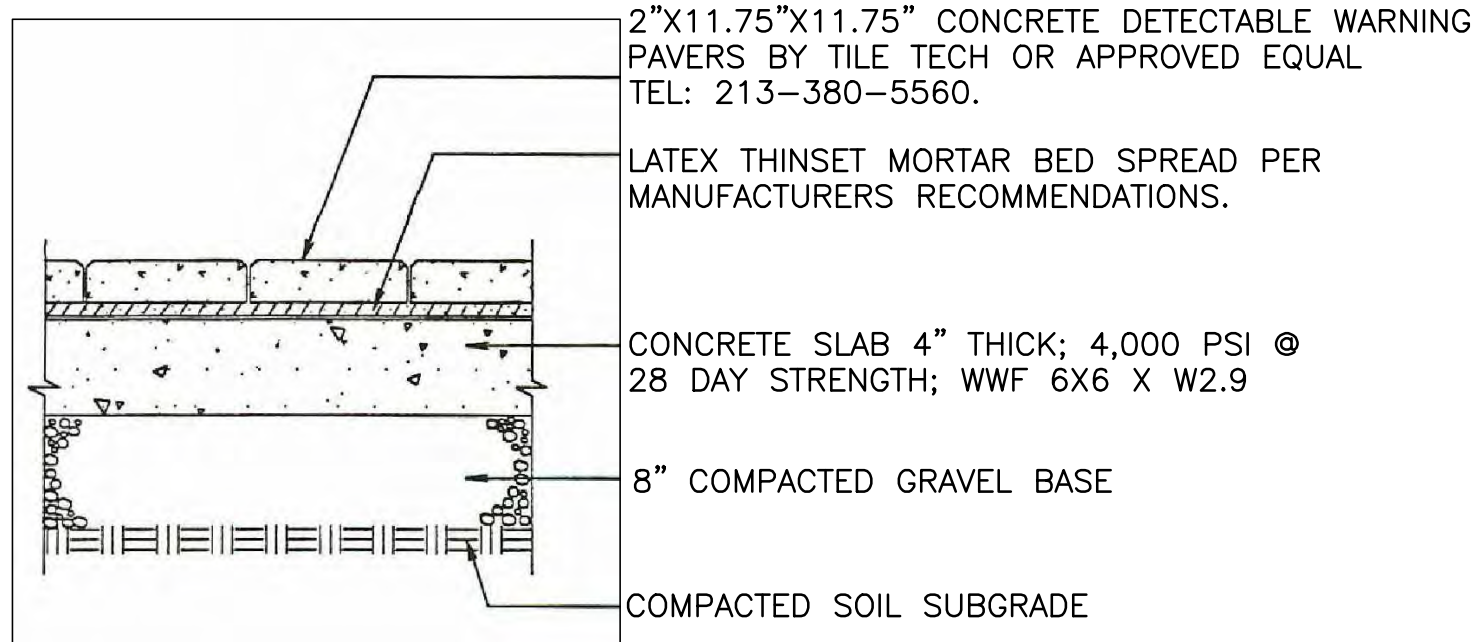


NOTE: BIKE RACKS TO BE FROM PARK A BIKE: MODEL 200 SERIES-INVERTED U BIKE RACKS HR202 30"x2.38"x32" SURFACE MOUNTED. SURFACE MOUNT PER MANUFACTURER'S RECOMMENDATIONS. FINISH SELECTED BY OWNER. PROVIDE SHOP DRAWINGS FOR APPROVAL PRIOR TO ORDERING.

BICYCLE RACK DETAIL

NOT TO SCALE

6



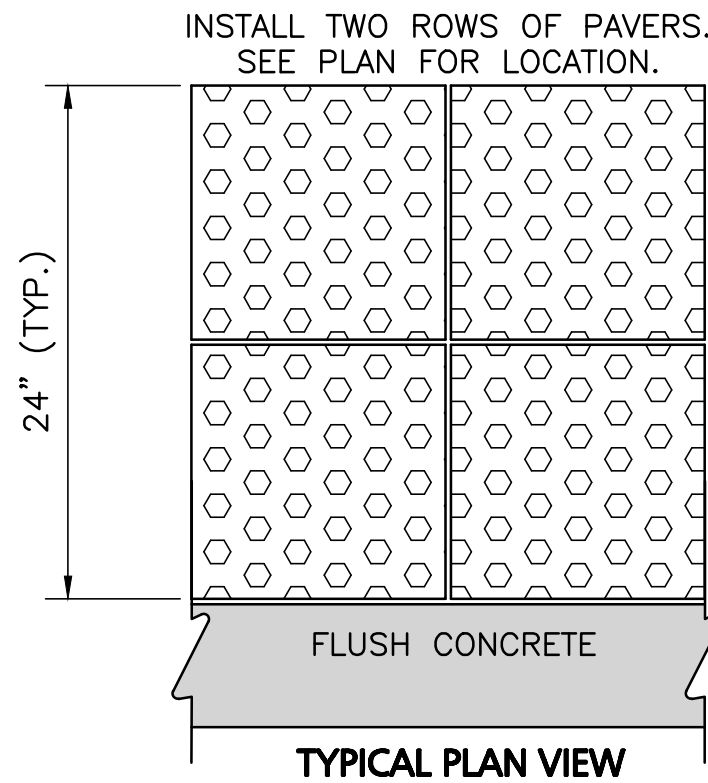
TYPICAL SECTION VIEW

- NOTES:
1. CONCRETE SLAB SHALL BE SLOPED 1.5% CROSS PITCH MAX TO PROVIDE COMPLETE SURFACE DRAINAGE. SEE GRADING PLAN & HANDICAP CURB CUT / CURB TRANSITION DETAIL.
 2. SLAB TO HAVE STEEL TROWEL AND FINE BROOM FINISH. DO NOT USE CURING COMPOUNDS. CONTRACTOR TO ADD EXPANSION JOINTS AND PREMOLED FILLER AT EDGE OF TILES AND ADJACENT MATERIAL.
 3. SET TILES FLUSH WITH ADJACENT MATERIALS.
 4. SUBMIT SHOP DRAWINGS OF TILES AND SAMPLE FOR APPROVAL OF COLOR TO OWNER / ARCH.
 5. INSTALL DETECTABLE WARNING PAVERS PER MANUFACTURER'S RECOMMENDATIONS.

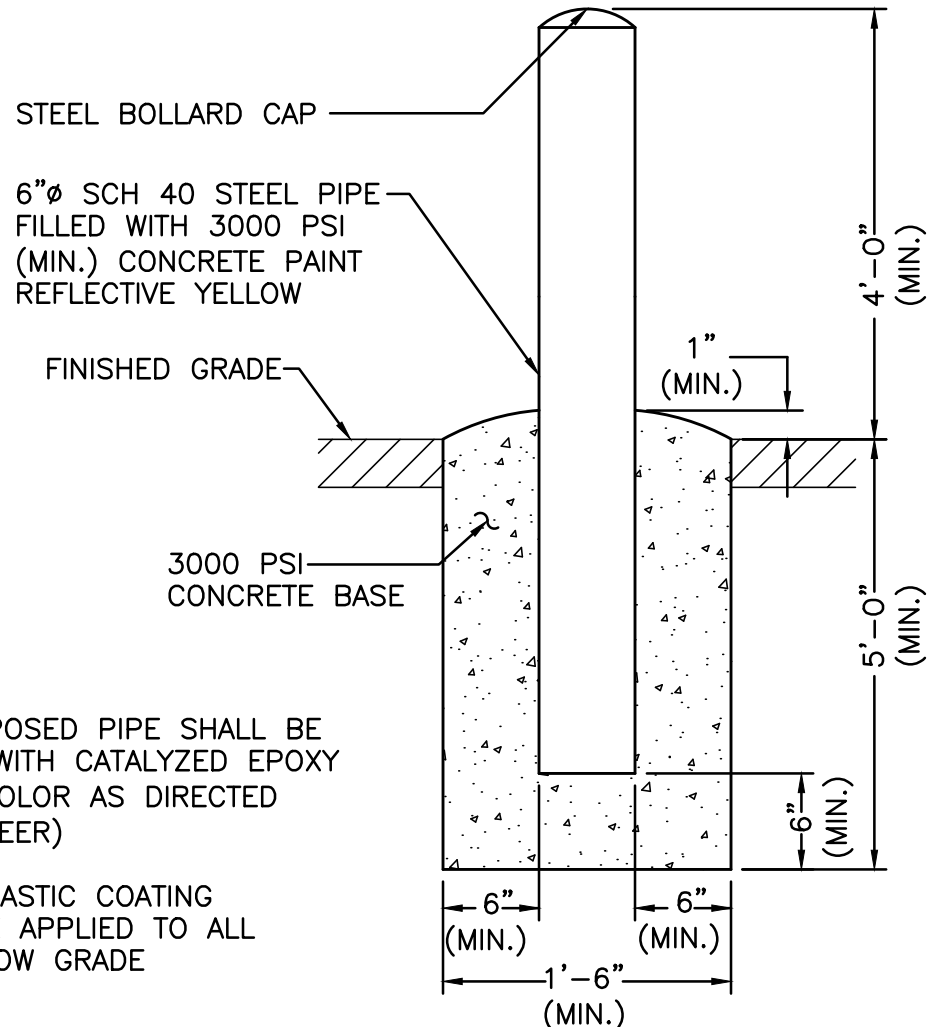
TACTILE WARNING PAVERS

NOT TO SCALE

7



TYPICAL PLAN VIEW



- NOTES:
- ALL EXPOSED PIPE SHALL BE PAINTED WITH CATALYZED EPOXY PAINT. (COLOR AS DIRECTED BY ENGINEER)
 - A BITUMASTIC COATING SHALL BE APPLIED TO ALL PIPE BELOW GRADE

FIXED PIPE BOLLARD DETAIL

NOT TO SCALE

8

NOT USED

NOT TO SCALE

9



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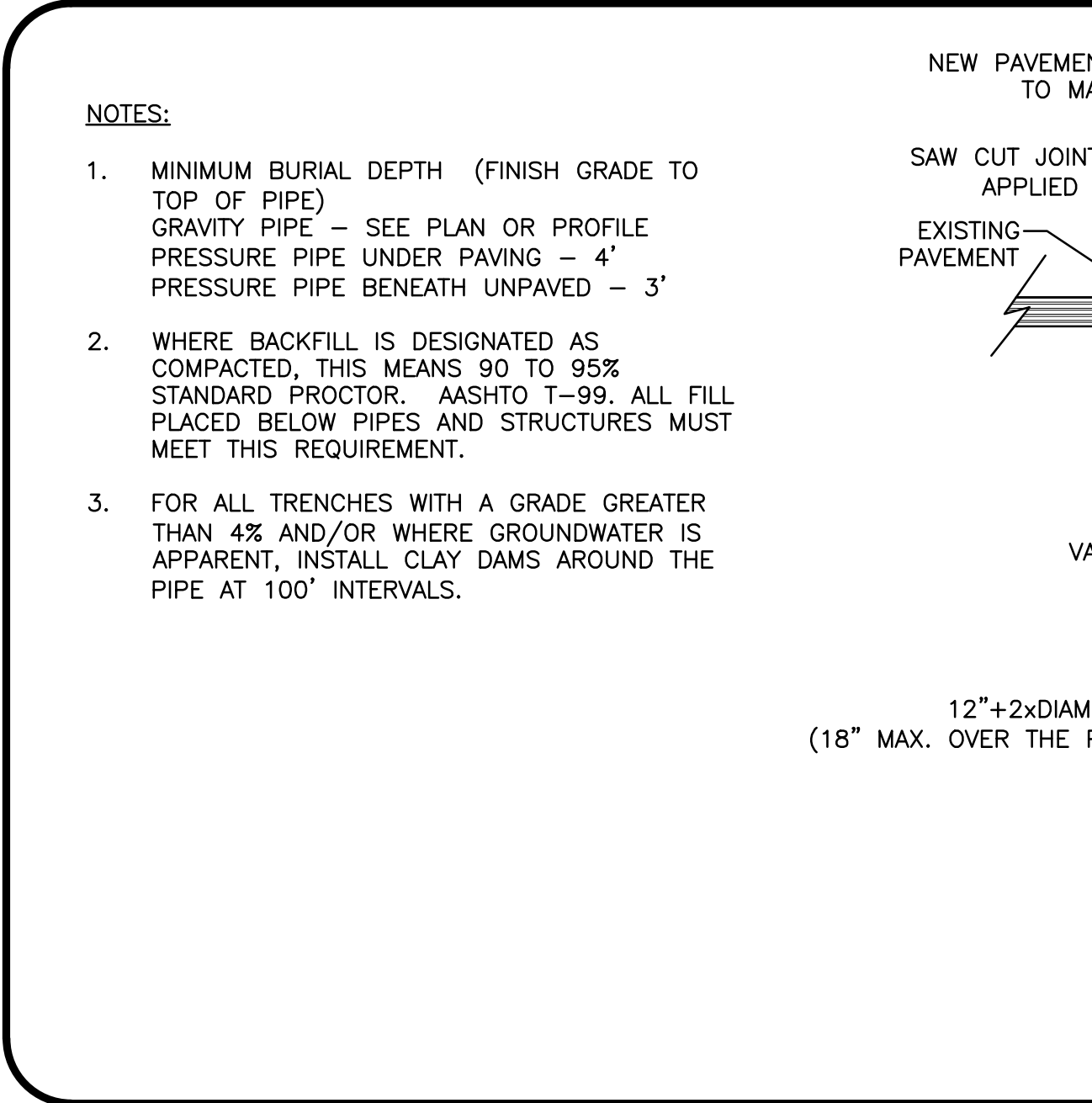
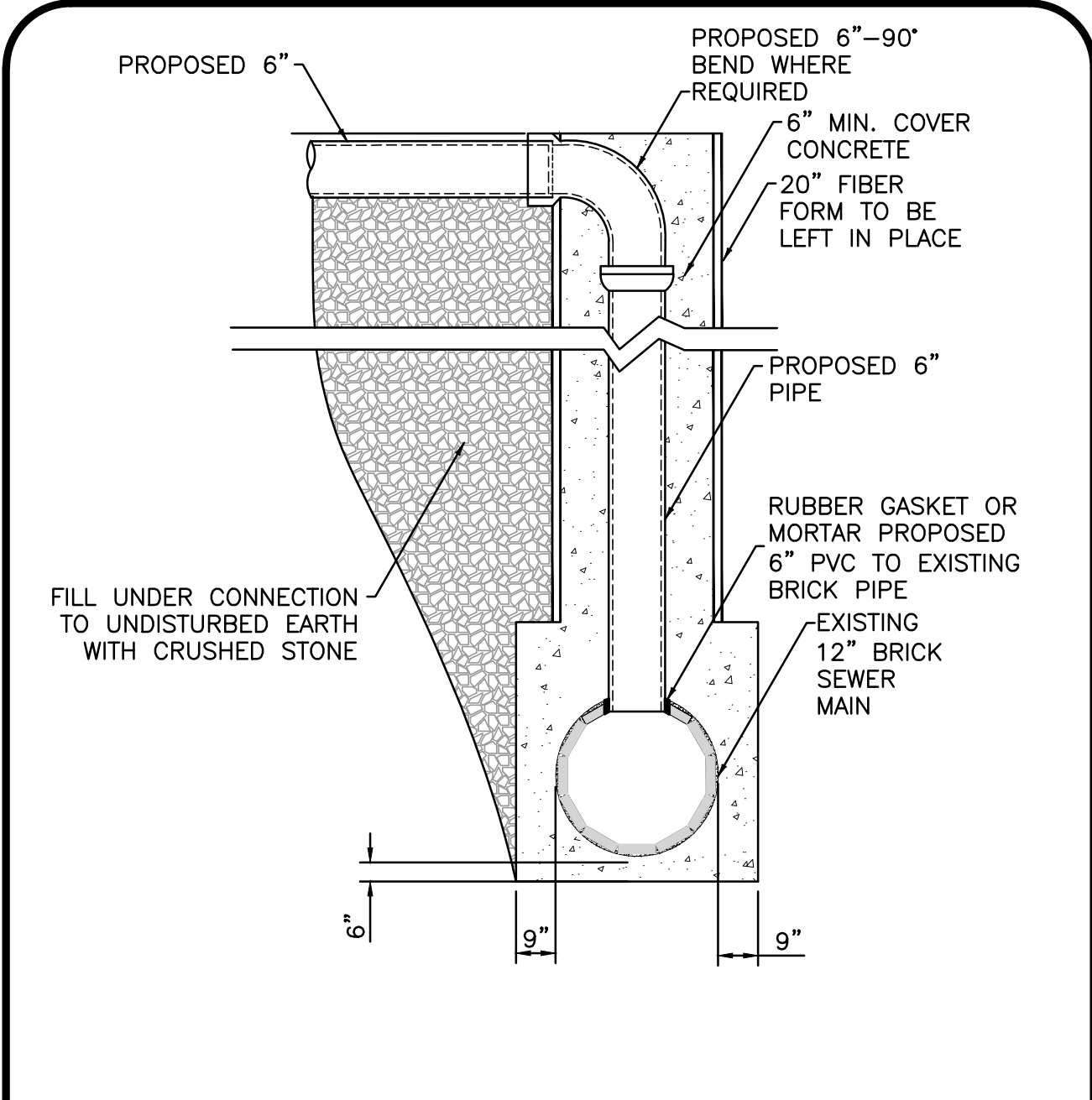
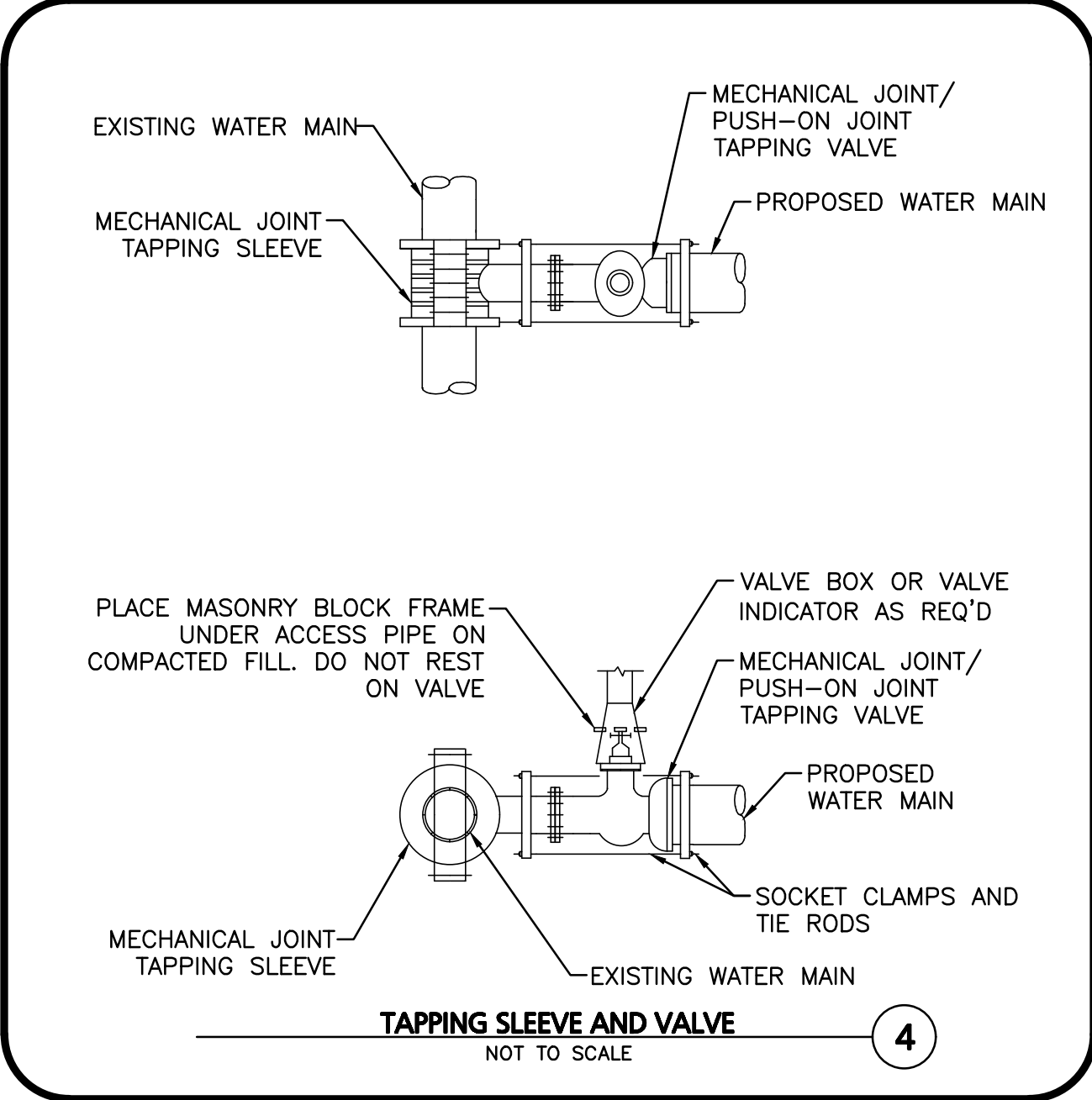
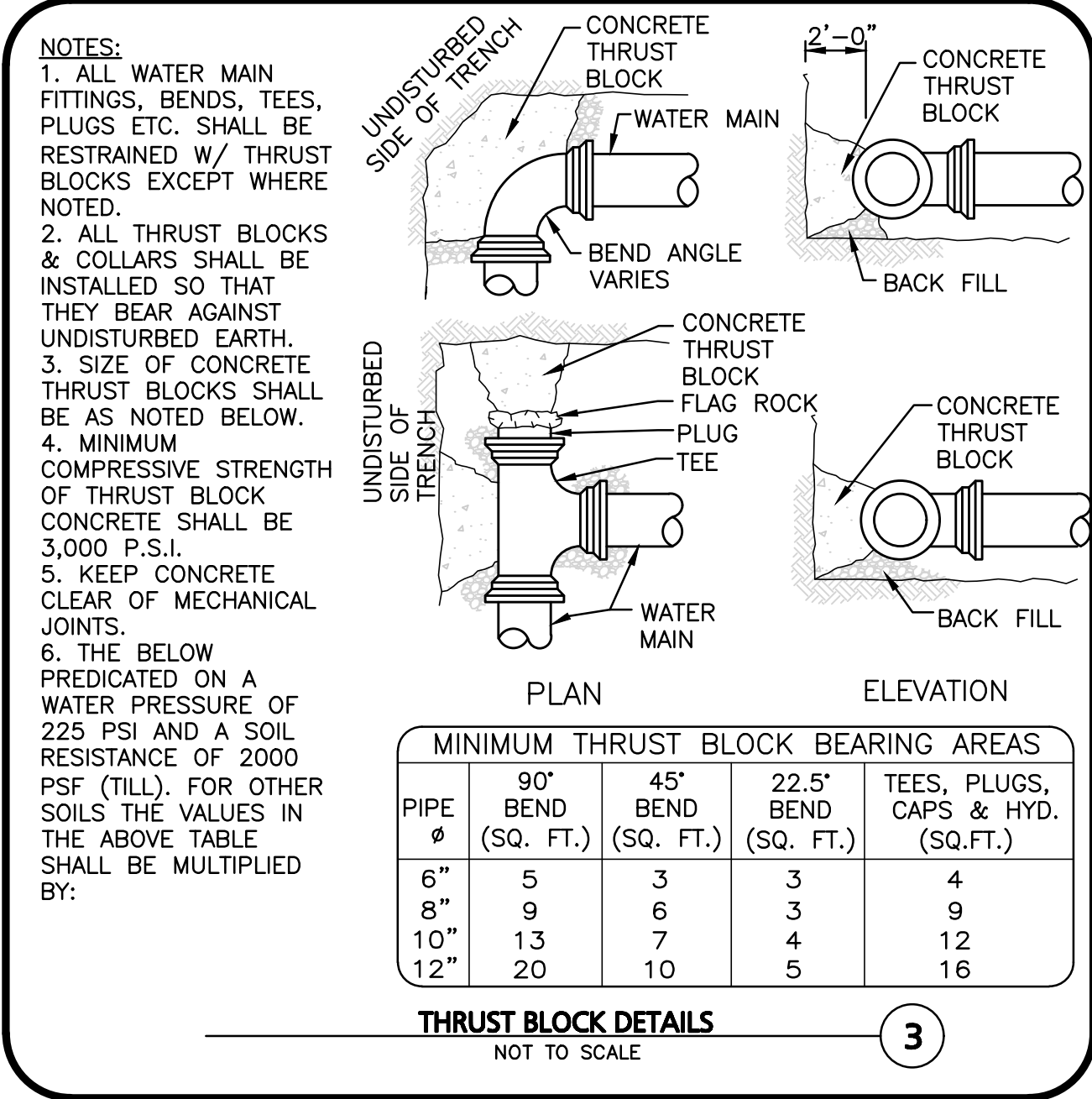
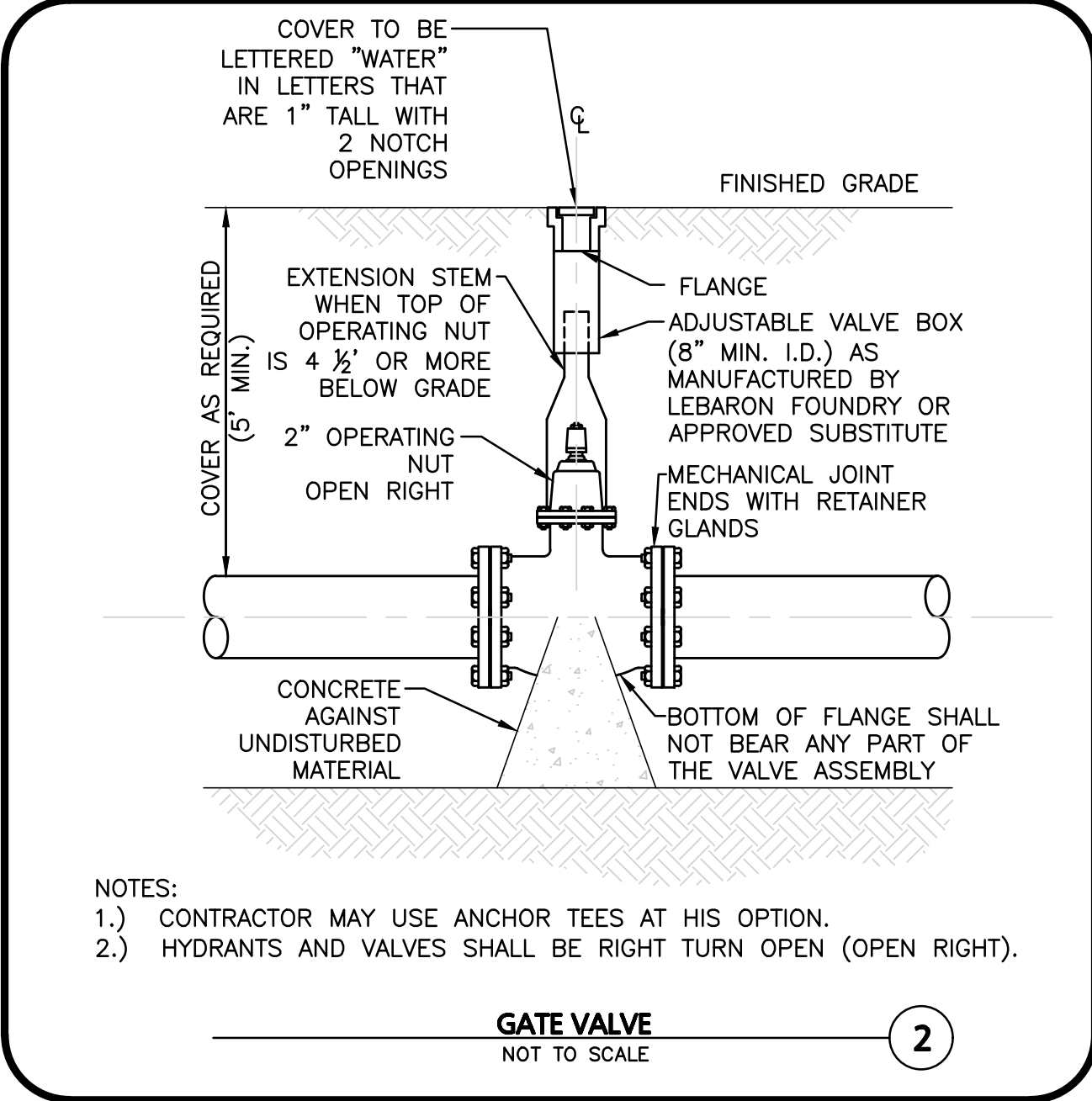
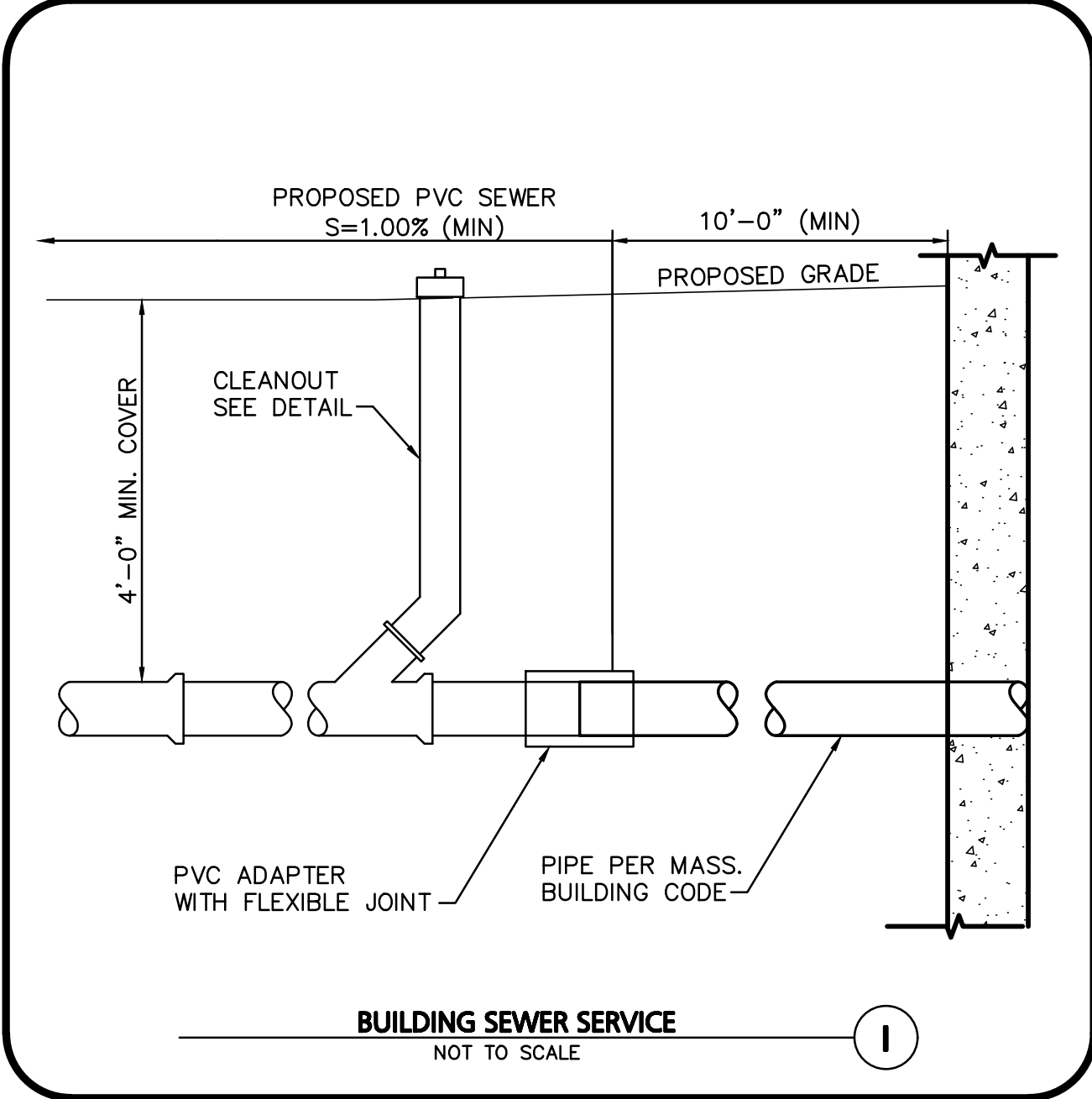
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DRAWING TITLE:

DETAILS

SHEET No.

C-502



CONDITION & PIPE	**SELECT MATERIAL	LINING MATERIAL	Y-DIMENSION
DUCTILE IRON "ORDINARY SOIL"	TYPE I, II, OR III	SAND OR TYPE III	3"
RCP "ORDINARY SOIL"	TYPE II OR III	SAND OR TYPE III	3"
ALL PIPE OVER BEDROCK OR LEDGE	TYPE II OR III	SAND OR TYPE III	8"
DUCTILE IRON IN CLAY OR MUCK	TYPE II OR III	SAND	4"
RCP IN CLAY	TYPE II OR III	SAND	8"
ALL PLASTICS	TYPE III	SAND OR TYPE III	6"

* SUITABLE MATERIAL SHALL CONTAIN NO STONE GREATER THAN 4" IN DIAMETER, NO FROZEN LUMPS, AND ONLY MINOR AMOUNTS OF CLAY OR ORGANIC MATERIAL. ALL MATERIAL TO BE PLACED IN MAX 12" LIFTS AND COMPACTED BEFORE PLACING NEXT LIFT.

**TYPE I MATERIAL SHALL BE EITHER GRAVEL OR EXCAVATED MATERIAL CONTAINING NO STONES GREATER THAN 1.5" DIAMETER, NO FROZEN LUMPS, CLAY OR ORGANIC MATERIAL.

**TYPE II MATERIAL SHALL BE CLEAN, HARD, CRUSHED OR NATURAL STONE WITH A GRADATION BY WEIGHT OF 100% PASSING A 1.5" SQUARE OPENING, NOT MORE THAN 25% PASSING A 3/4" OPENING, AND NOT MORE THAN 5% PASSING A 1/2" SQUARE OPENING.

**TYPE III MATERIAL SHALL BE CLEAN, HARD, CRUSHED STONE FREE FROM COATINGS AND THOROUGHLY WASHED WITH A GRADATION BY WEIGHT OF 100% PASSING A 1" SQUARE OPENING, AND 0 TO 5% PASSING A 1/4" SQUARE OPENING.

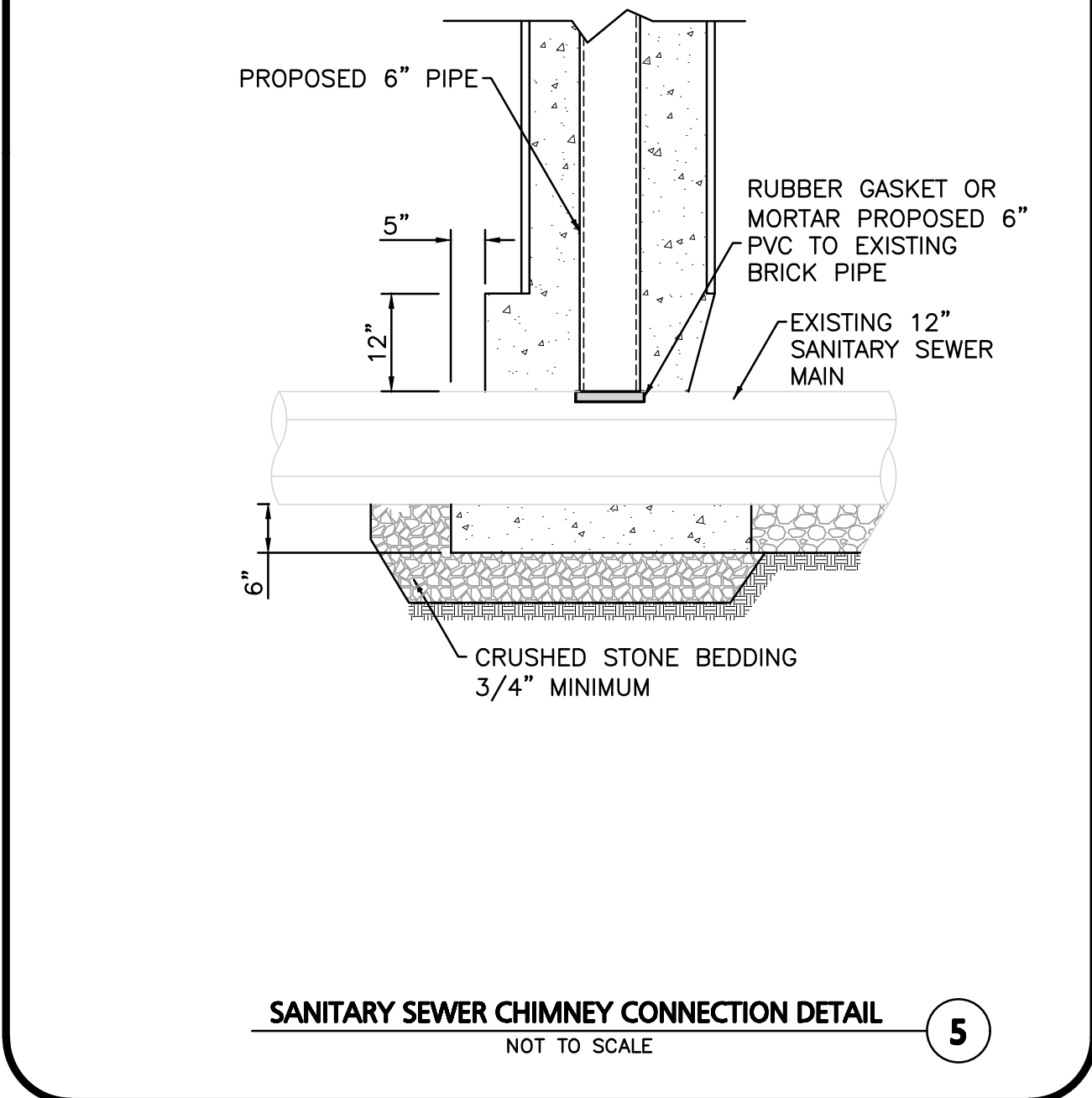
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BRIAN D. JONES
CIVIL
No. 46212
REGISTERED
PROFESSIONAL ENGINEER

03-10-21

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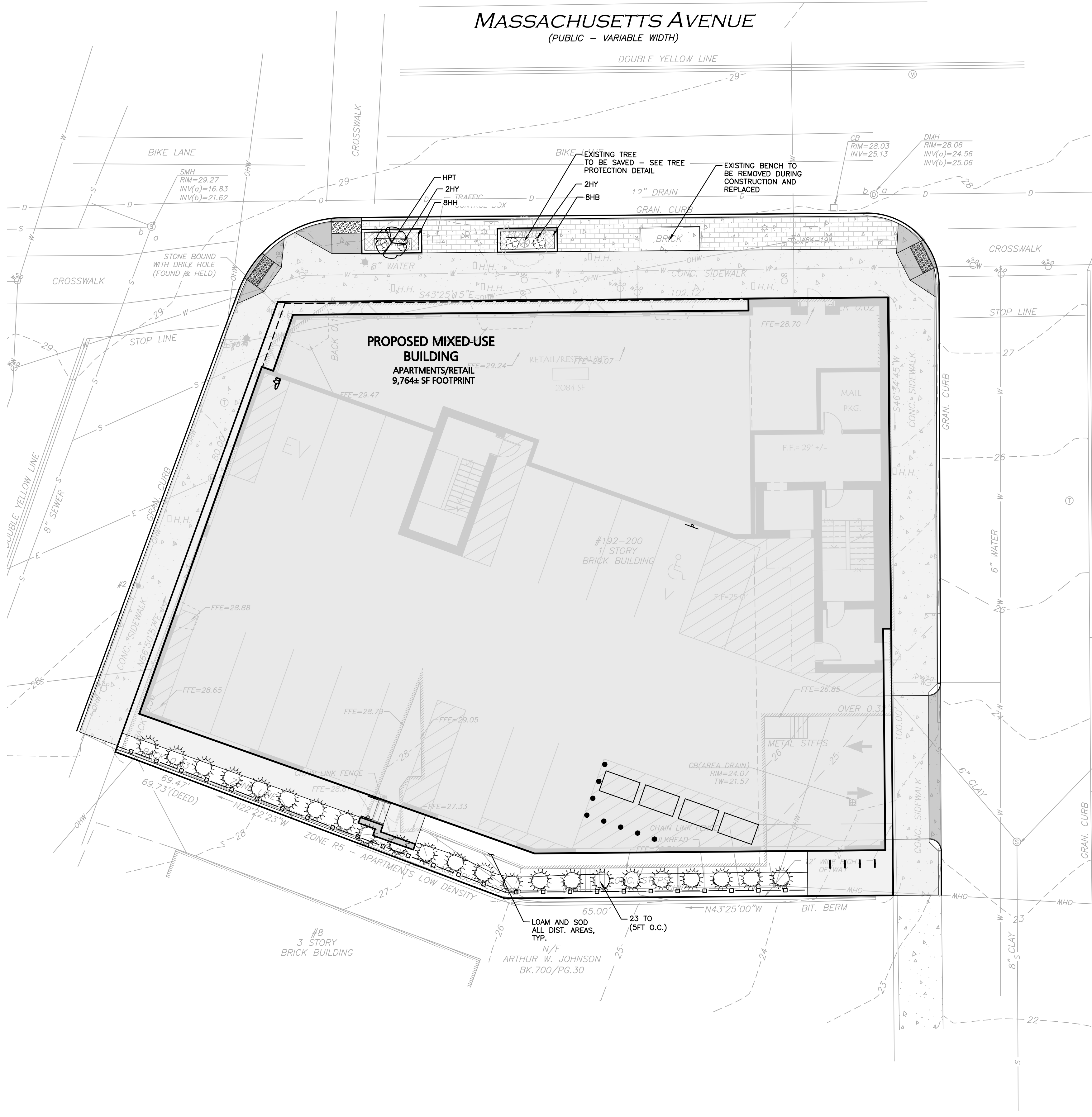
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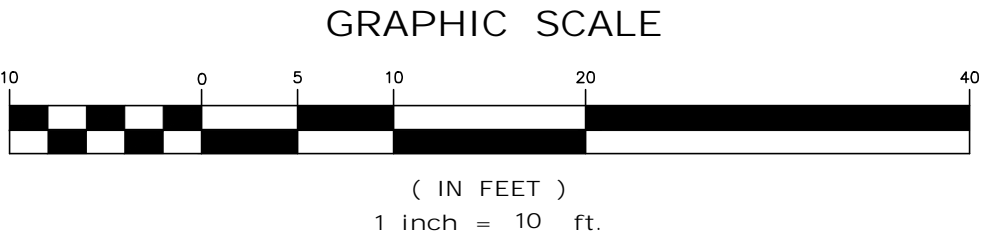


LEGEND	
DECIDUOUS TREE	
EVERGREEN TREE	
FLOWERING TREE	
SHRUBS	
MULCH BED	
PERENNIALS/GROUNDCOVER	

PLANTING SCHEDULE-TREES, SHRUBS, GROUNDCOVERS & PERENNIALS

KEY	QUANTITY	BOTANICAL NAME	COMMON NAME	MIN. SIZE	SPACING	COMMENTS
EVERGREEN TREES						
TO	26	THUJA O. 'WINTERGREEN'	WINTERGREEN ARBORVITAE	6-7' HT	AS SHOWN	B&B
TREES/SHRUBS						
HPT	1	HYDRANGEA PANICULATA 'LIMELIGHT'	TREE FORM LIMELIGHT HYDRANGEA	5-6' HT. TREEFORM	AS SHOWN	B&B
HY	4	HYDRANGEA ARBORESCENS 'INVINCIBELLE WEE WHITE'	INVINCIBELLE WEE WHITE HYDRANGEA	#3	AS SHOWN	POT
PERENNIALS						
HH	8	HEMEROCALLIS 'HAPPY RETURNS'	HAPPY RETURNS DAYLILLY	#1	24" O.C	STAGGERED
HB	8	HOSTA 'HADSPEN BLUE'	HADSPEN BLUE HOSTA	#1	24" O.C	STAGGERED

- NOTES:
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 - ALL LANDSCAPED AREAS WITH SHRUBS, TREES, AND PERENNIALS TO HAVE 18" MINIMUM DEPTH OF TOPSOIL. EIGHTEEN INCHES OF TOPSOIL AROUND TREES AND SHRUBS DOES NOT INCLUDE AMENDED PLANTING SOIL WITHIN TREE / SHRUB PIT FOR FULL DEPTH OF ROOTBALLS. SEE PLANTING DETAILS FOR PLANTING DEPTH AT SHRUBS AND TREES. ALL AREAS OF LOAM AND SEED OR LOAM & SOD TO HAVE 6" MINIMUM DEPTH OF TOPSOIL. TOPSOIL TO BE TESTED BY CONTRACTOR, AND APPROVED BY A&M PRIOR TO PURCHASE AND OR PLACEMENT. GENERAL CONTRACTOR, DEMOLITION CONTRACTOR, AND LANDSCAPE CONTRACTOR TO COORDINATE PROPER DEPTH OF EXISTING MATERIAL REMOVAL ACROSS SITE SO THAT 18" MINIMUM AND 6" MINIMUM DEPTHS OF PROPOSED TOPSOIL NOTED ABOVE ARE MET AT NO ADDITIONAL COST TO OWNER. SEE TOPSOIL DETAIL.



REGISTERED LANDSCAPE ARCHITECT FOR ALLEN & MAJOR ASSOCIATES, INC.

192-200 MASSACHUSETTS AVE, LLC
455 MASSACHUSETTS AVE, STE 1
ARLINGTON, MA 02474

PROJECT:
190 & 192-200
MASSACHUSETTS AVE
ARLINGTON, MA 02476

PROJECT NO. 2729-02 DATE: 10/23/2020

SCALE: 1" = 10' DWG. NAME: C2729-02

DESIGNED BY: BCD CHECKED BY: BDJ

PREPARED BY:



WOBURN, MA • LAKEVILLE, MA • MANCHESTER, NH
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DRAWING TITLE: LANDSCAPE PLAN SHEET No. L-101

LOAM AND SODDING NOTES

CONTRACTOR SHALL SOD AREAS NOTED ON THE PLANS.

SOD IS TO BE A BLEND OF FOUR TO FIVE CURRENT AND IMPROVED HYBRID BLUEGRASS AND FESCUE MIXES APPROPRIATE FOR BOTH SEMI-SHADED AND AREAS OF SUN.

HYBRIDS MAY INCLUDE: BLACKSTONE KENTUCKY BLUEGRASS, AWARD KENTUCKY BLUEGRASS, CHALLENGER KENTUCKY BLUEGRASS, BLACKBURG II KENTUCKY BLUEGRASS OR COMPARABLE AND EQUAL BLUEGRASS HYBRIDS.

1. SOD SHALL BE HIGH QUALITY, NURSERY GROWN ON CULTIVATED MINERAL AGRICULTURAL SOILS. SOD SHALL BE MOIST, AND MACHINE CUT AT A UNIFORM SOIL THICKNESS OF AT LEAST ¾" AT TIME OF CUTTING. MEASUREMENT FOR THICKNESS SHALL INCLUDE TOP GROWTH AND THATCH. SOD SHALL BE FREE OF DISEASES, WEEDS, BARE SPOTS, OR INSECTS.
2. SODDING TO BE COMPLETED "IN SEASON" BETWEEN APRIL 1 TO JUNE 15 OR AUGUST 15 TO OCTOBER 1, EXCEPT FOR RE-SODDING OF BARE SPOTS. IF UNABLE TO SOD WITHIN THESE TIMEFRAMES, CONTRACTOR TO INSTALL EROSION CONTROL MATS ON ALL SLOPES 3:1 AND OVER, HYDROSEED ALL EXPOSED AREAS, ADD SOIL STABILIZER "FLUX TERRA HP-FGM SOIL STABILIZER" AS MANUFACTURED BY "PROFILE" TO HYDROSEED (AT RATE OF 3,000 LBS PER ACRE), AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR TO COMPLETE ALL ABOVE "OUT OF SEASON" REQUIREMENTS AND THEN ALSO BE RESPONSIBLE FOR RE-GRADING AND RE-SODDING ALL DISTURBED, ERODED, OR BARE SPOTS WITHIN NEXT CLOSEST PLANTING SEASON IN FALL OR SPRING AT NO ADDITIONAL COST TO OWNER. CONTRACTOR RESPONSIBLE FOR ALL MAINTENANCE UNTIL FINAL ACCEPTANCE OF LAWN AREAS INCLUDING: WATERING, ADDING FERTILIZERS AND LIME AND MOWING AT NO ADDITIONAL COST TO OWNER.
3. COMMERCIAL FERTILIZER SHALL BE APPLIED AT THE RATE OF 25 POUNDS PER 1000 SQ. FT. OR AS RECOMMENDED BY THE TESTING AGENCY. LIME TO BE SPREAD AT THE RATE OF 100 POUNDS PER 1000 SQ. FT. OR AS RECOMMENDED BY THE TESTING AGENCY. COMMERCIAL FERTILIZER SHALL BE A COMPLETE FERTILIZER CONTAINING AT LEAST 50% OF THE NITROGEN OF WHICH IS DERIVED FROM NATURAL ORGANIC SOURCES OF UREAFORM. IT SHALL CONTAIN THE FOLLOWING PERCENTAGES BY WEIGHT: NITROGEN (N) 10%, PHOSPHORUS (P) 6%, POTASH (K) 4%. LIME SHALL BE AN APPROVED AGRICULTURAL LIMESTONE CONTAINING NOT LESS THAN 85% OF TOTAL CARBONATES. LIMESTONE SHALL BE GROUND TO SUCH FINENESS THAT 50% WILL PASS A 100 MESH SIEVE AND 90% WILL PASS THROUGH A 20 MESH SIEVE.
4. CONTRACTOR RESPONSIBLE FOR WATERING, MOWING, AND RE-SODDING OF LAWN BARE SPOTS UNTIL A UNIFORM, HEALTHY STAND OF GRASS IS ESTABLISHED AND ACCEPTED.

LANDSCAPE NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE TOWN OF ARLINGTON, MA.
2. PLANTING PLAN IS DIAGRAMMATIC IN NATURE. FINAL PLACEMENT OF PLANTS TO BE APPROVED BY THE LANDSCAPE ARCHITECT IN THE FIELD.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES, ANY PERMITTING AGENCIES, AND "DIG-SAFE" (1-888-344-7233) AT LEAST 72 HOURS IN ADVANCE OF ANY WORK THAT WILL REQUIRE EXCAVATION. CONTRACTOR SHALL NOTIFY THE OWNERS REPRESENTATIVE OF ANY CONFLICTS IN WRITING.
4. NO PLANT MATERIAL SHALL BE INSTALLED UNTIL ALL GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN THE IMMEDIATE AREA, ANY TREES NOTED AS "SEAL OR SELECTED SPECIMEN" SHALL BE TAGGED AND SEALED BY THE LANDSCAPE ARCHITECT.
5. ALL TREES SHALL BE BALLED AND BURLAPPED (B&B) UNLESS OTHERWISE NOTED OR APPROVED BY THE OWNER'S REPRESENTATIVE AND LANDSCAPE ARCHITECT.
6. CONTRACTOR SHALL VERIFY QUANTITIES SHOWN ON PLANT LIST. QUANTITIES SHOWN ON PLANS SHALL GOVERN OVER PLANT LIST.
7. ANY PROPOSED PLANT SUBSTITUTIONS MUST BE APPROVED IN WRITING BY OWNER'S REPRESENTATIVE AND LANDSCAPE ARCHITECT.
8. ALL PLANT MATERIALS INSTALLED SHALL MEET THE GUIDELINES ESTABLISHED BY THE STANDARDS FOR NURSERY STOCK PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
9. ALL PLANT MATERIALS SHALL BE GUARANTEED FOR ONE YEAR FOLLOWING DATE OF ACCEPTANCE.

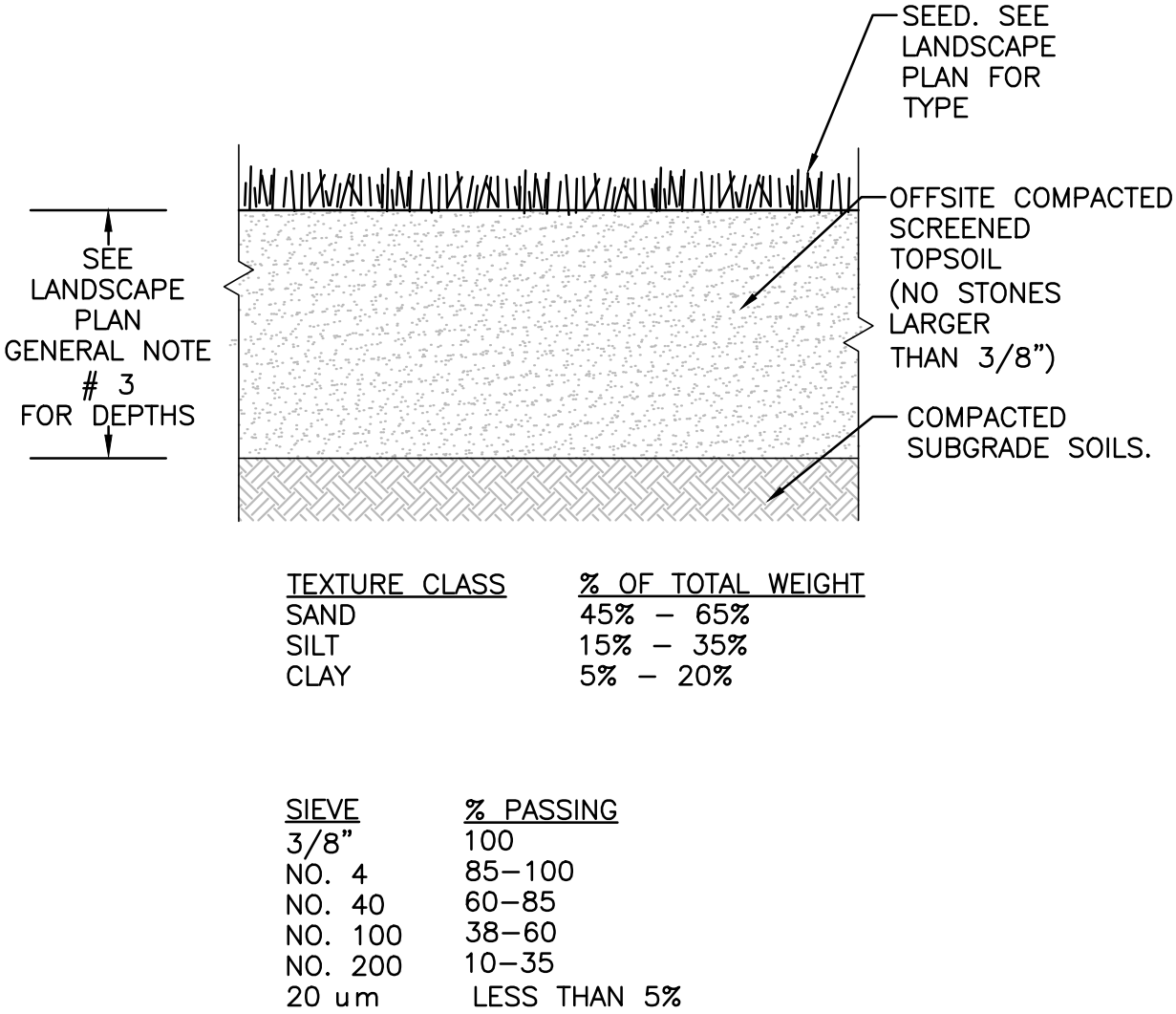
DIG SAFE



BEFORE YOU DIG
CALL 811 OR
1-888-DIG-SAFE
1-888-344-7233

LANDSCAPE NOTES CONT.

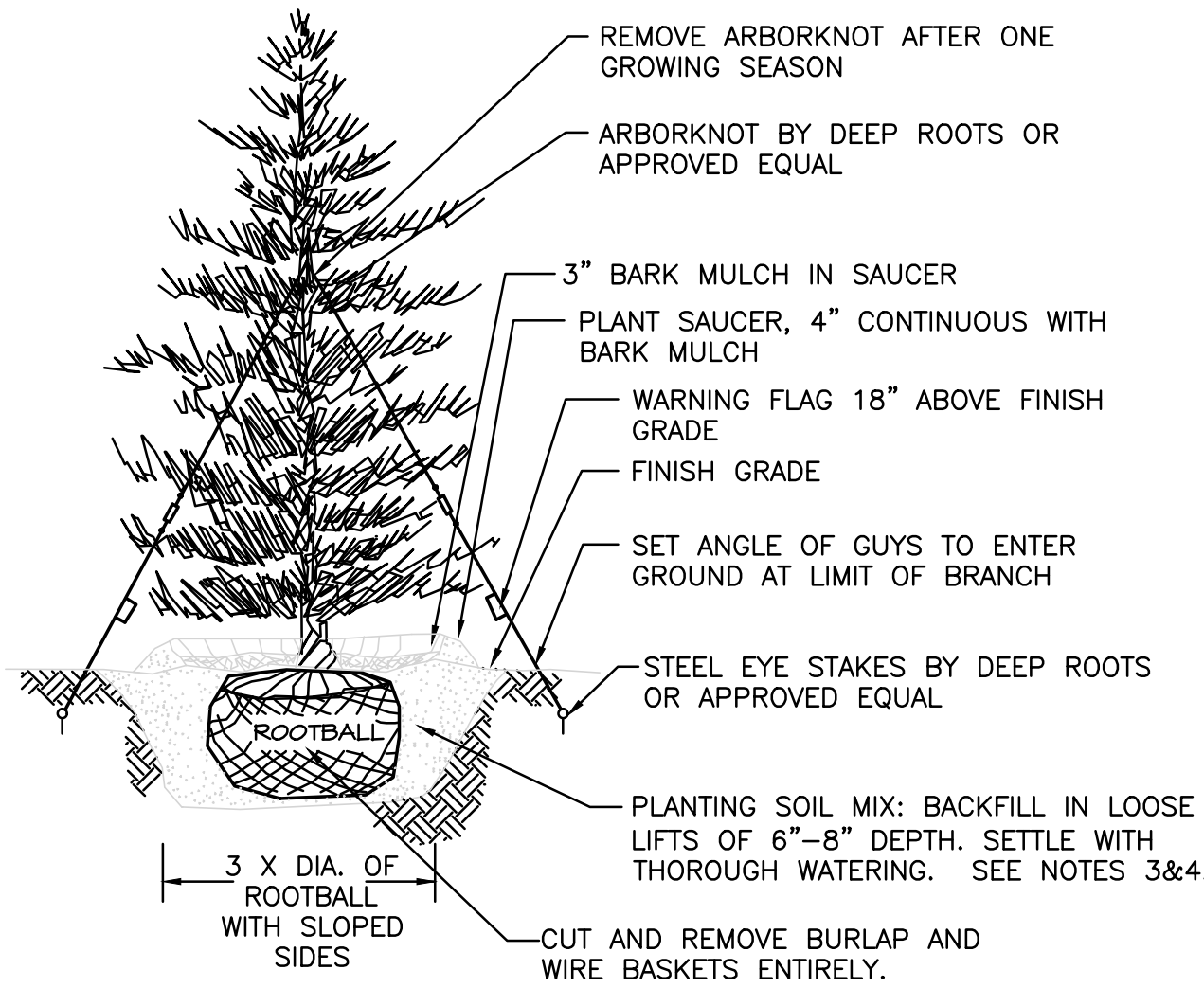
10. ALL DISTURBED AREAS NOT OTHERWISE NOTED SHALL RECEIVE 6" OF SUITABLE LOAM & SEED LAWNS WITH 3:1 OR GREATER SLOPES SHALL BE PROTECTED WITH AN EROSION CONTROL BLANKET.
11. ANY FALL TRANSPLANTING HAZARD PLANTS SHALL BE DUG IN THE SPRING AND STORED FOR FALL PLANTING.
12. TREES SHALL HAVE A MINIMUM CALIPER AS INDICATED ON THE PLANTING SCHEDULE TAKEN ONE FOOT ABOVE THE ROOT CROWN.
13. ALL PLANT BEDS AND TREE SAUCERS TO RECEIVE 3" OF PINE BARK MULCH. GROUND COVER AREAS SHALL RECEIVE 1" OF PINE BARK MULCH
14. ALL DECIDUOUS TREES ADJACENT TO WALKWAYS AND ROADWAYS SHALL HAVE A BRANCHING PATTERN TO ALLOW FOR A MINIMUM OF 7' OF CLEARANCE BETWEEN THE GROUND AND THE LOWEST BRANCH.
15. ALL TREE STAKES SHALL BE STAINED DARK BROWN.
16. CONTRACTOR RESPONSIBLE FOR WATERING, AND RESEEDING OF BARE SPOTS UNTIL A UNIFORM STAND OF VEGETATION IS ESTABLISHED AND ACCEPTED.
17. ALL PARKING ISLANDS PLANTED WITH SHRUBS SHALL HAVE 24" OF TOP SOIL. FINISH GRADE SHALL BE EQUAL TO THE TOP OF CURB.
18. SOIL SAMPLES, TESTS, AND SHOP DRAWINGS SHALL BE PROVIDED TO THE LANDSCAPE ARCHITECT OR THE OWNER FOR APPROVAL PRIOR TO CONSTRUCTION.
19. AN MINIMUM 18" WIDE BARRIER OF 1" GRAY OR TAN PEASTONE SHALL BE INSTALLED IN ALL PLANT BEDS WHICH ABUT THE BUILDINGS. NO MULCH IS ALLOWED WITHIN 18" OF ALL BUILDINGS PER THE LATEST EXECUTIVE OFFICE OF PUBLIC SAFETY AND SECURITY DEPARTMENT OF FIRE SERVICES REGULATION (527 CMR 17.00). INSTALL 6" DEEP OF PEASTONE WITH MIRAFI WEED FABRIC BENEATH AND STEEL EDGING BETWEEN THE PEASTONE AND ADJACENT MULCH BED.
20. ALL PROPOSED LANDSCAPE AREAS INCLUDING MOWED LAWNS, TREES, SHRUB BEDS, AND PERENNIALS SHALL BE PROVIDED WITH WATER EFFICIENT UNDERGROUND IRRIGATION. DESIGN AND INSTALLATION OF IRRIGATION SYSTEM TO BE PERFORMED BY AN APPROVED IRRIGATION DESIGN BUILD CONTRACTOR OR BY AN APPROVED EQUAL, TO BE DETERMINED BY THE OWNERS REPRESENTATIVE AND LANDSCAPE ARCHITECT. IRRIGATION SYSTEM IS TO BE DESIGNED FOR EFFICIENT WATER USAGE INCLUDING: USE OF DRIP IRRIGATION FOR SHRUBS AND PERENNIALS, IRRIGATION SYSTEM WITH HEAD-TO-HEAD COVERAGE, A CENTRAL SHUT-OFF VALVE, AND A RAIN SENSOR TO SHUT OFF IRRIGATION DURING RAIN EVENTS.



- NOTES:
1. TOP OF LOAM (TOPSOIL) IS FINISH GRADE.
2. ALL TOPSOIL (BOTH ONSITE AND OFFSITE SOURCES) SHALL BE COMPOSED OF A NATURAL, FERTILE, FRIABLE SOIL TYPICAL OF CULTIVATED TOPSOILS OF THE LOCALITY. OFFSITE SOIL SHALL BE SUITABLE FOR THE GERMINATION OF SEEDS AND SUPPORT OF VEGETATIVE GROWTH, WITH ADDITIVES, IF REQUIRED, TO ACHIEVE PARTICLE DISTRIBUTION AND ORGANIC CONTENT BELOW. TOPSOIL SHALL BE TAKEN FROM A WELL-DRAINED, ARIABLE SITE, FREE OF SUBSOIL, LARGE STONES, EARTH CLOUDS, STICKS, STUMPS, CLAY LUMPS, ROOTS, OTHER OBJECTIONABLE, EXTRANEIOUS MATTER OR DEBRIS NOR CONTAIN TOXIC SUBSTANCES.
3. THE CONTRACTOR SHALL PROVIDE THE OWNER / LANDSCAPE ARCHITECT WITH TOPSOIL TEST RESULTS (RECOMMEND UMASS AMHERST SOIL TESTING LAB) FOR APPROVAL PRIOR TO OBTAINING AND PLACING THE SOIL. IF ANY TOPSOIL IS PURCHASED OR PLACED PRIOR TO APPROVAL BY OWNER / LANDSCAPE ARCHITECT, IT IS AT CONTRACTORS RISK, AND IT CAN BE REMOVED AT NO ADDITIONAL COST TO THE OWNER. IF THE PLANTING SOIL (BOTH ONSITE AND OFFSITE SOURCES) DOES NOT FALL WITHIN THE REQUIRED SIEVE ANALYSIS, TEXTURAL CLASS, ORGANIC CONTENT, OR PH RANGE, IT SHALL BE ADJUSTED TO MEET THE SPECIFICATIONS THROUGH THE ADDITION OF SAND, COMPOST, LIMESTONE, OR ALUMINUM SULFATE TO BRING IT WITHIN THE SPECIFIED LIMITS AT NO ADDITIONAL COST TO THE OWNER.
4. TOPSOIL SHALL HAVE A PH VALUE BETWEEN 5.5 AND 6.5. TOPSOIL SHALL CONTAIN BETWEEN 4% AND 8% ORGANIC MATTER OF TOTAL DRY WEIGHT AND SHALL CONFORM TO THE FOLLOWING GRADATION AND TEXTURE CLASS ABOVE.

TOPSOIL FOR LAWN, TREES, SHRUBS, & PERENNIALS

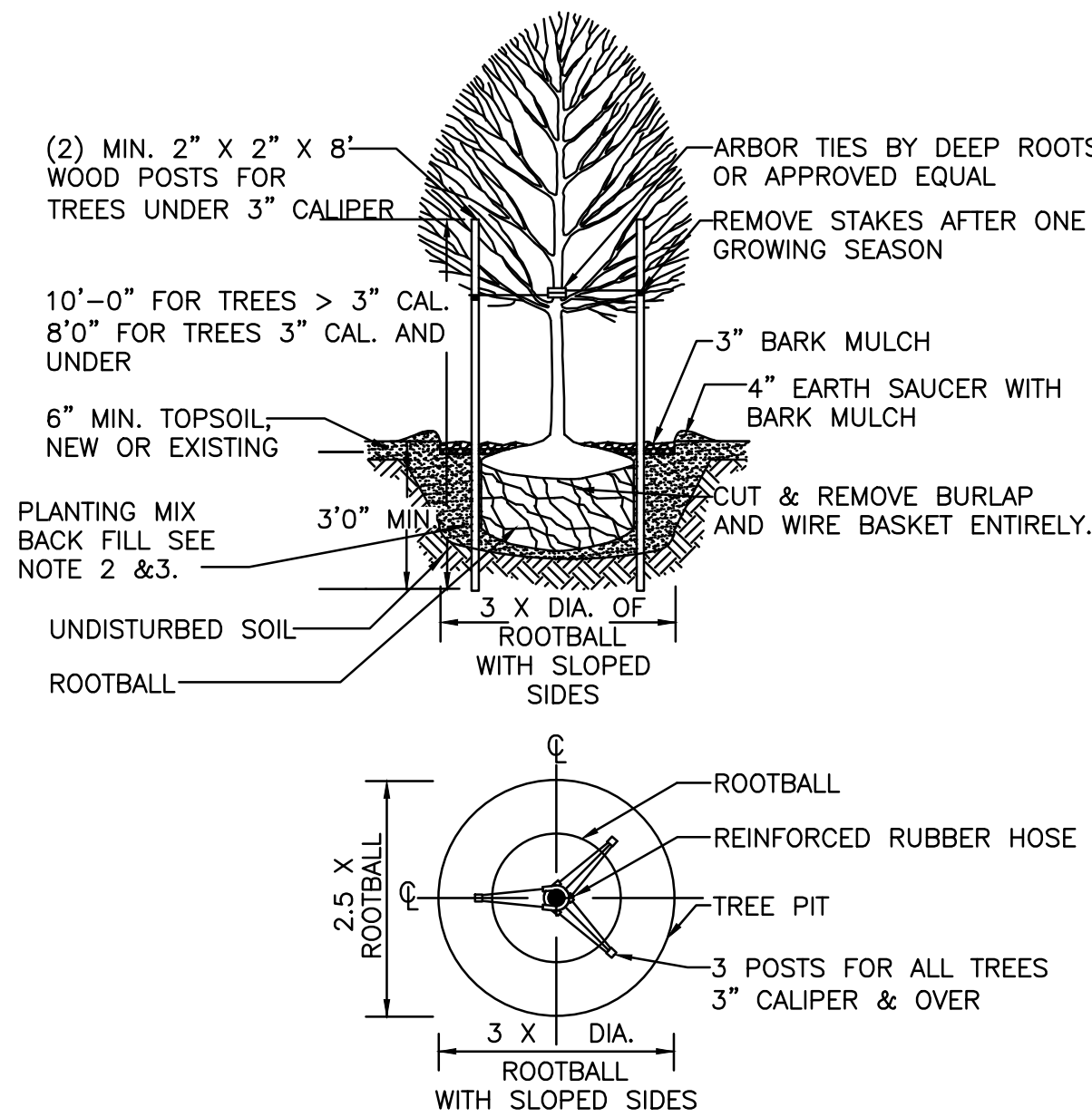
2



EVERGREEN TREE DETAIL

NOT TO SCALE

1



DECIDUOUS TREE PLANTING DETAIL

NOT TO SCALE

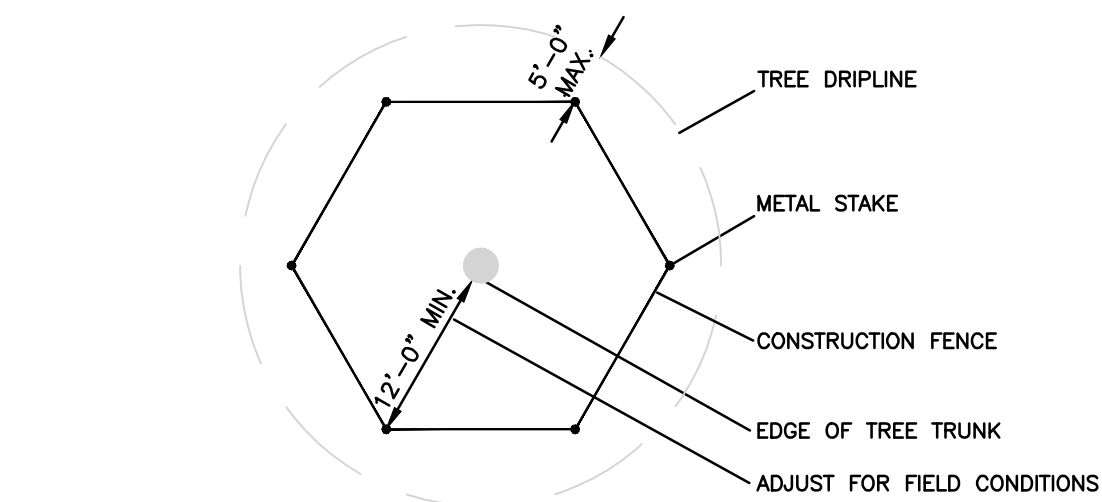
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NOTES

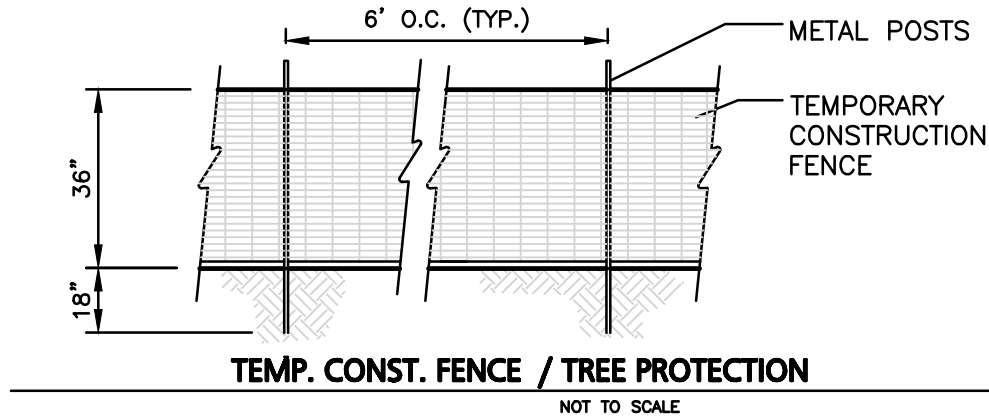
1. TREES SHALL BEAR SAME RELATIONSHIP TO FINISH GRADE AS IT BORE TO NURSERY OR FIELD GRADE. ROOT FLARE SHALL BE 2" ABOVE FINISH GRADE. REMOVE SOIL FROM TRUNK FLARE OF TREE TO DETERMINE ACTUAL TOP OF ROOTBALL AREA.
2. INSTALL THREE GUYS PER TREE; EQUALLY SPACED AROUND BALL.
3. ATTACH GUYS AT 2/3 HEIGHT OF TREE.
4. BACKFILL WITH PLANTING MIX. PLANT MIX TO BE: 50% NATIVE TOPSOIL, 20% COMPOST (LEAVES & ORGANIC MATERIAL, NO ASH) 20% PEAT MOSS, 10% SAND.
5. ADD MYCORRHIZA SOIL ADDITIVES AND SLOW RELEASE FERTILIZER WHEN PLANT HOLES ARE 50% FILLED AND WATER THOROUGHLY AT COMPLETION.

NOTES:

1. ALL TREES SHALL HAVE THE SAME RELATIONSHIP TO FINISH GRADE AFTER PLANTING AS THEY HAD AT THE ORIGINAL NURSERY SETTING. ROOT FLARE SHALL BE 2" ABOVE FINISH GRADE. REMOVE SOIL FROM TRUNK FLARE OF TREE TO DETERMINE ACTUAL ROOTBALL AREA.
2. BACKFILL WITH PLANTING MIX. PLANT MIX TO BE: 50% NATIVE TOPSOIL, 20% COMPOST (LEAVES & ORGANIC MATERIAL, NO ASH) 20% PEAT MOSS, 10% SAND.
3. ADD MYCORRHIZA SOIL ADDITIVES AND SLOW RELEASE FERTILIZER WHEN PLANT HOLES ARE 50% FILLED AND WATER THOROUGHLY AT COMPLETION.



- NOTE:
1. CONSTRUCTION FENCE TO BE "VISUAL BARRIER FENCE" AS MANUFACTURED BY EXXON CHEMICAL COMPANY ATLANTA, GA; "KONTROL SAFETY FENCE" AS MANUFACTURED BY MIRAFI, CHARLOTTE, N.C. OR APPROVED EQUAL.
2. IF GROUPS OF TREES ARE TO BE PROTECTED, EXTEND FENCE AROUND PERIMETER TO CONFORM TO MINIMUM DIMENSIONS FOR TREE TRUNKS AND DRIPLINE.



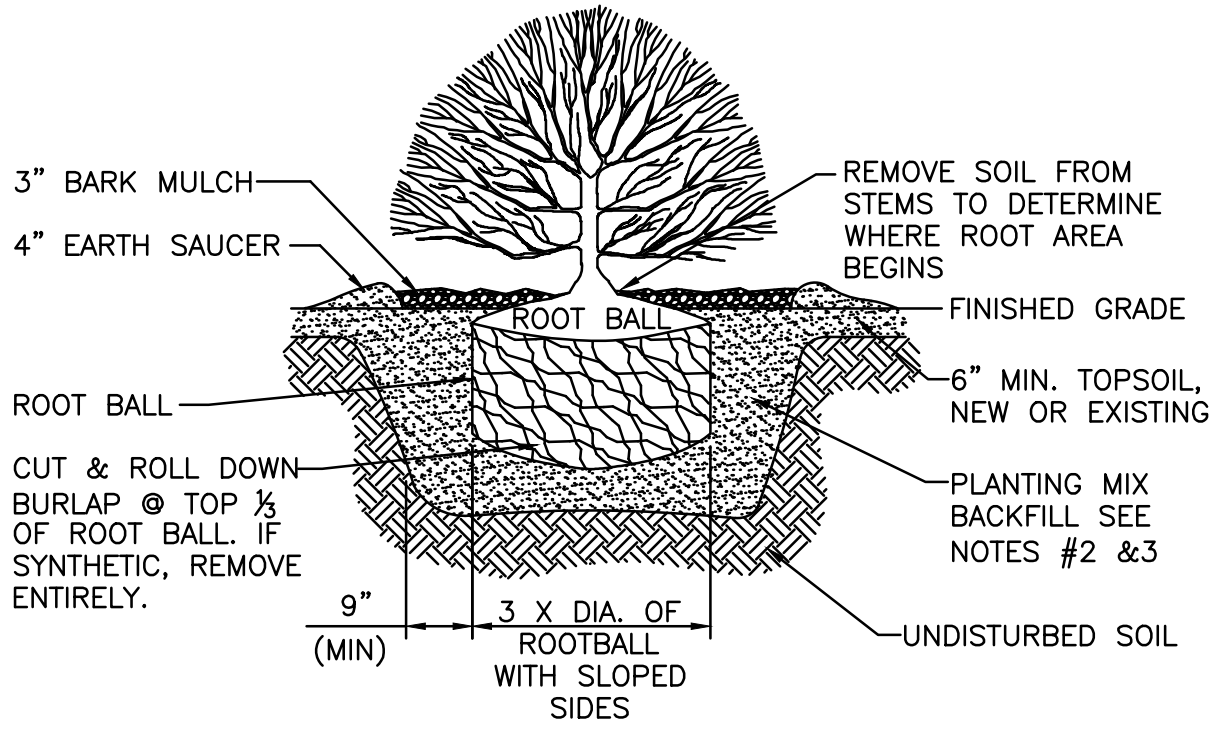
TEMP. CONST. FENCE / TREE PROTECTION

NOT TO SCALE

4

NOTES:

1. ALL SHRUBS SHALL HAVE THE SAME RELATIONSHIP TO FINISH GRADE AFTER PLANTING AS THEY HAD AT THE ORIGINAL NURSERY SETTING. SET SHRUB 1"-2" ABOVE FINISH GRADE.
2. BACKFILL WITH PLANTING MIX. PLANT MIX TO BE: 50% NATIVE TOPSOIL, 20% COMPOST (LEAVES & ORGANIC MATERIAL, NO ASH) 20% PEAT MOSS, 10% SAND.
3. ADD MYCORRHIZA SOIL ADDITIVES AND SLOW RELEASE FERTILIZER WHEN PLANT HOLES ARE 50% FILLED AND WATER THOROUGHLY AT COMPLETION.
4. SHRUB BEDS TO HAVE 24" MIN. OF CONTINUOUS PLANTING SOIL.



SHRUB PLANTING DETAIL

NOT TO SCALE

5



REGISTERED LANDSCAPE ARCHITECT FOR
ALLEN & MAJOR ASSOCIATES, INC.

1	03/10/2021	ISSUED FOR ARB REVIEW
REV	DATE	DESCRIPTION

APPLICANT/OWNER:

192-200 MASSACHUSETTS AVE, LLC
455 MASSACHUSETTS AVE, STE 1
ARLINGTON, MA 02474

PROJECT:

190 & 192-200
MASSACHUSETTS AVE
ARLINGTON, MA 02476

PROJECT NO.	2729-02	DATE:	10/23/2020
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SCALE:	NTS	DWG. NAME:	C2729-02
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DESIGNED BY:	BCD	CHECKED BY:	BDJ
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PREPARED BY:



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FAX: (781) 935-2896

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DRAWING TITLE:	SHEET No.
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LANDSCAPE DETAILS

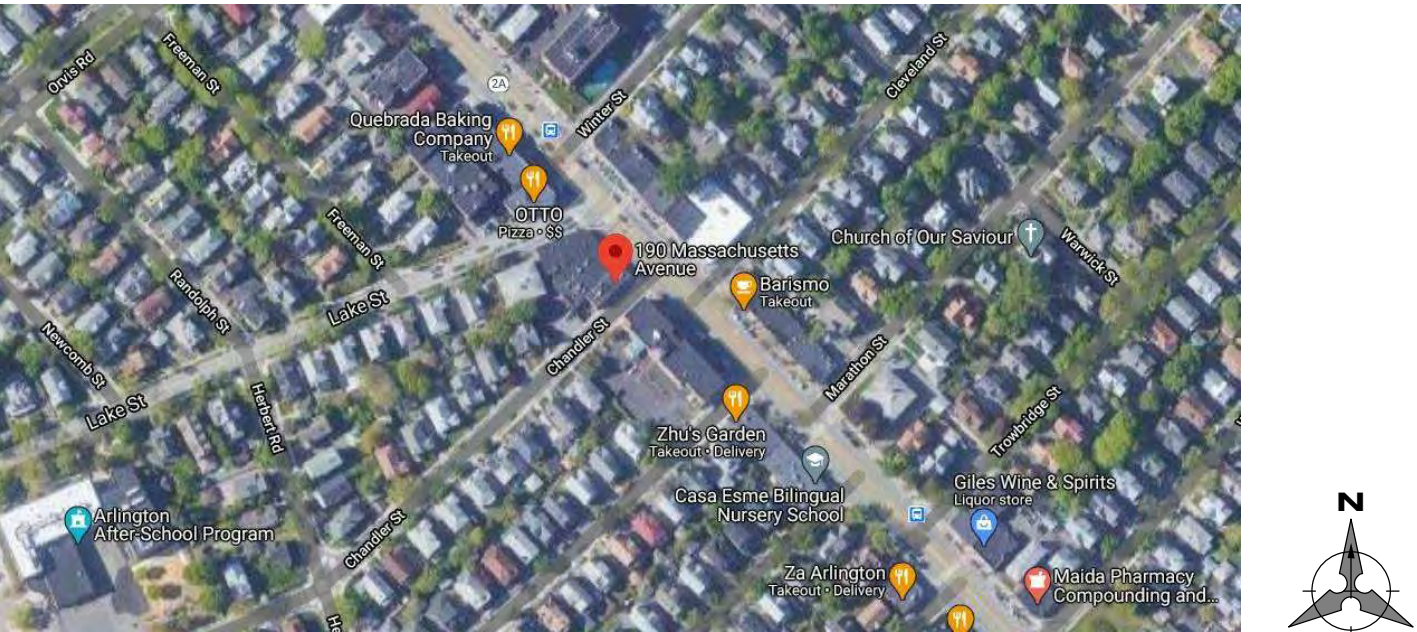
L-501

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PERSPECTIVE VIEW:



AERIAL SITE PLAN:



DRAWING LIST

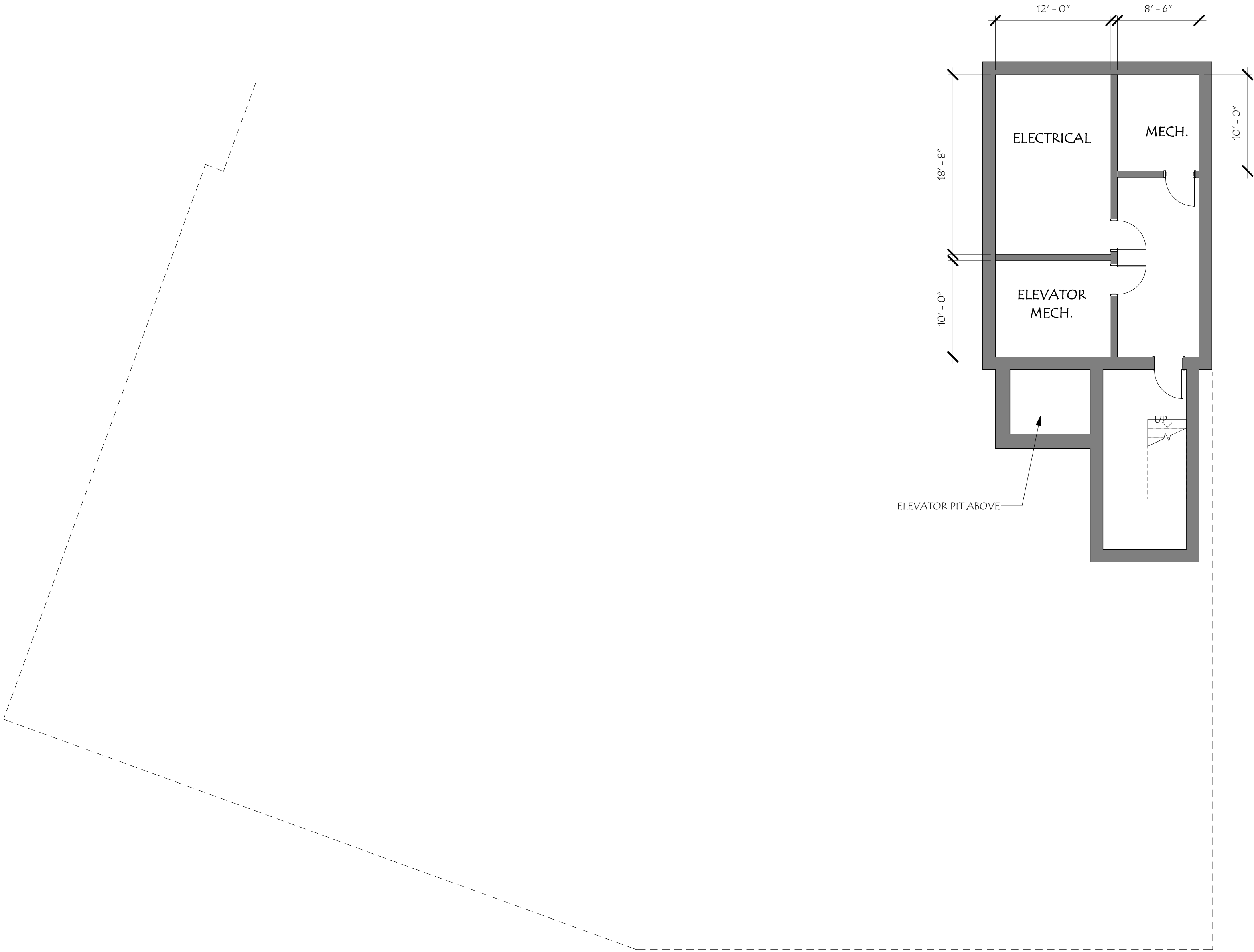
ARCHITECTURAL	
A1.00	OVERALL PLAN - BASEMENT
A1.01	OVERALL PLAN - FIRST FLOOR
A1.02	OVERALL PLAN - SECOND FLOOR
A1.03	OVERALL PLAN - THIRD FLOOR
A1.04	OVERALL PLAN - FOURTH FLOOR
A1.05	OVERALL PLAN - FIFTH FLOOR
A1.06	OVERALL PLAN - ROOF
A2.01	BUILDING ELEVATIONS
A9.01	STREET ELEVATIONS
A9.02	BANK CORNER RENDER
A9.03	COMMERCIAL CORNER RENDER
A9.04	ROOF DECK RENDER
A9.05	SOLAR STUDIES

REVISION
DATE

200 MASS AVE MULTI

190-200 MASSACHUSETTS AVE
ARLINGTON, MA

1 OVERALL PLAN - BASEMENT
1/8" = 1'-0"



Title:
OVERALL PLAN -
BASEMENT

A1.00

Scale:
Drawn By: PPS
Checked By: ALW
Project No.: 2020051
Date: 03/01/21

Revisions:		
#	Description	Date

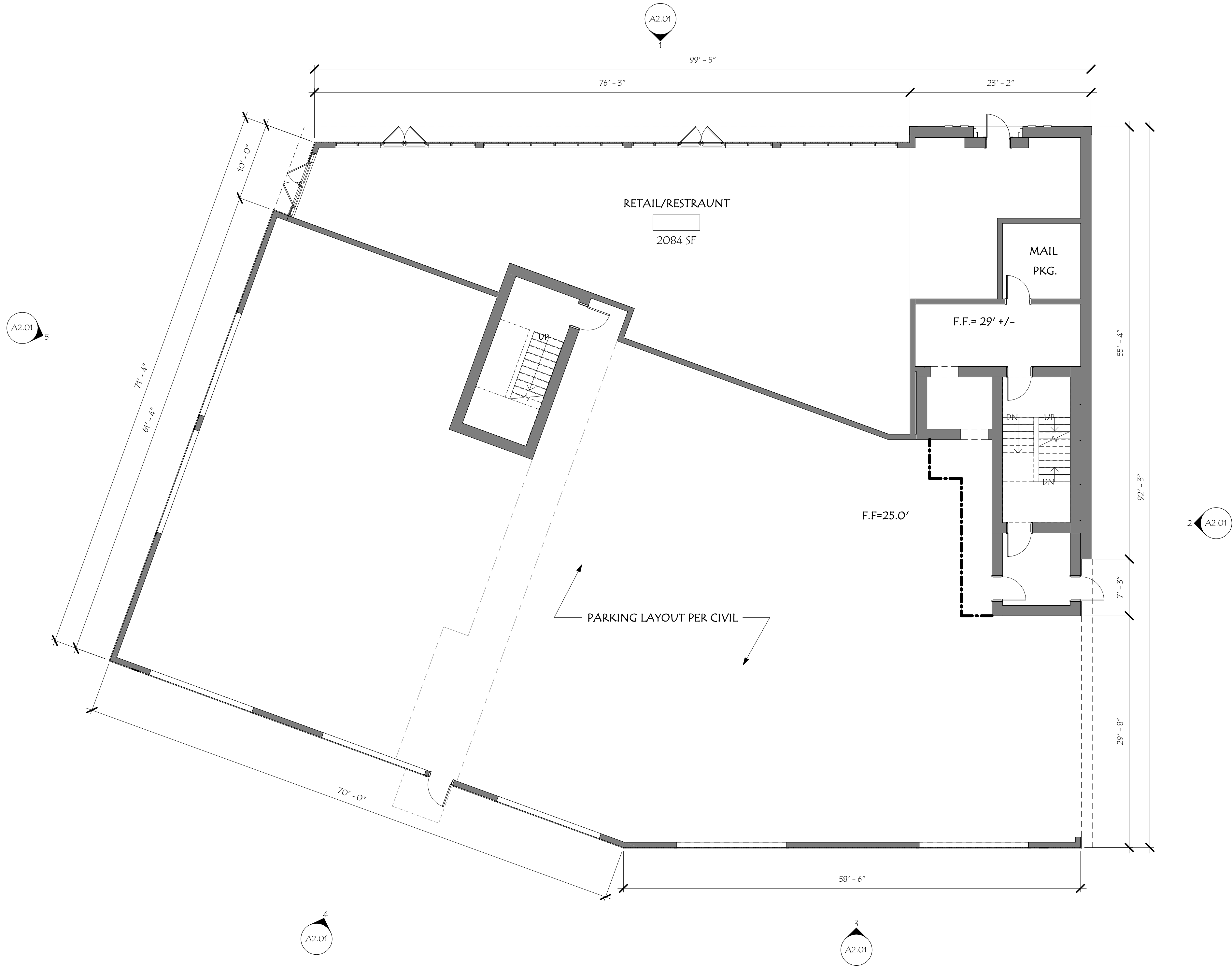
200 MASS AVE MULTI

190-200 MASSACHUSETTS AVE
ARLINGTON, MA

NOT FOR
CONSTRUCTION



1 OVERALL PLAN - 1ST FLOOR
1/8" = 1'-0"



NOT FOR
CONSTRUCTION

200 MASS AVE MULTI

190-200 MASSACHUSETTS AVE
ARLINGTON, MA

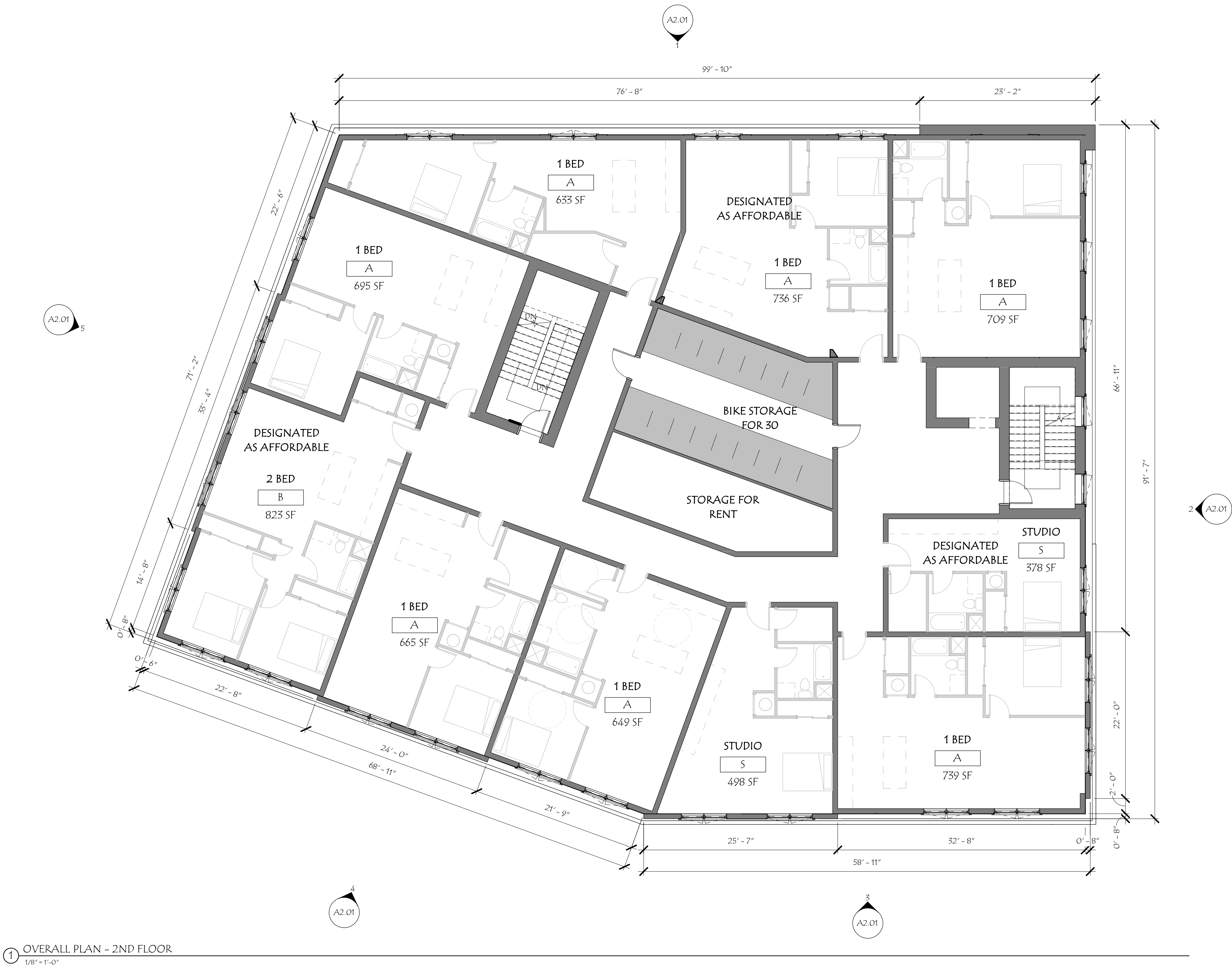
Title: OVERALL PLAN - FIRST FLOOR	Revisions:		Scale: 1/8" = 1'-0"	Drawn By: PPS	Checked By: ALW	Project No.: 2020051	Date: 03/01/21
	#	Description					
A1.01							

200 MASS AVE MULTI

190-200 MASSACHUSETTS AVE
ARLINGTON, MA

UNIT MATRIX:		
	#	%
SECOND FLOOR:		
STUDIO	2 UNIT	20%
1 BED	7 UNITS	70%
2 BED	1 UNIT	10%
TOTAL:		
STUDIO	10 UNITS	27%
1 BED	23 UNITS	62%
2 BED	4 UNITS	11%
TOTAL	37 UNITS	

NOTE:
PRELIMINARY UNIT INTERNAL LAYOUT SHOWN, FINAL LAYOUT MAY VARY



1 OVERALL PLAN - 2ND FLOOR
1/8" = 1'-0"

Scale:	1/8" = 1'-0"	Revisions:	Date
Drawn By:	PPS	#	Description
Checked By:	ALW		
Project No.:	20200051		
Date:	03/01/21		

Title: OVERALL PLAN - SECOND FLOOR

A1.02

NOT FOR
CONSTRUCTION

200 MASS AVE MULTI
190-200 MASSACHUSETTS AVE
ARLINGTON, MA

Revisions:	#	Description	Date

Scale:	1/8" = 1'-0"
Drawn By:	PPS
Checked By:	ALW
Project No.:	2020051
Date:	03/01/21

Title:
OVERALL PLAN -
THIRD FLOOR

A1.03

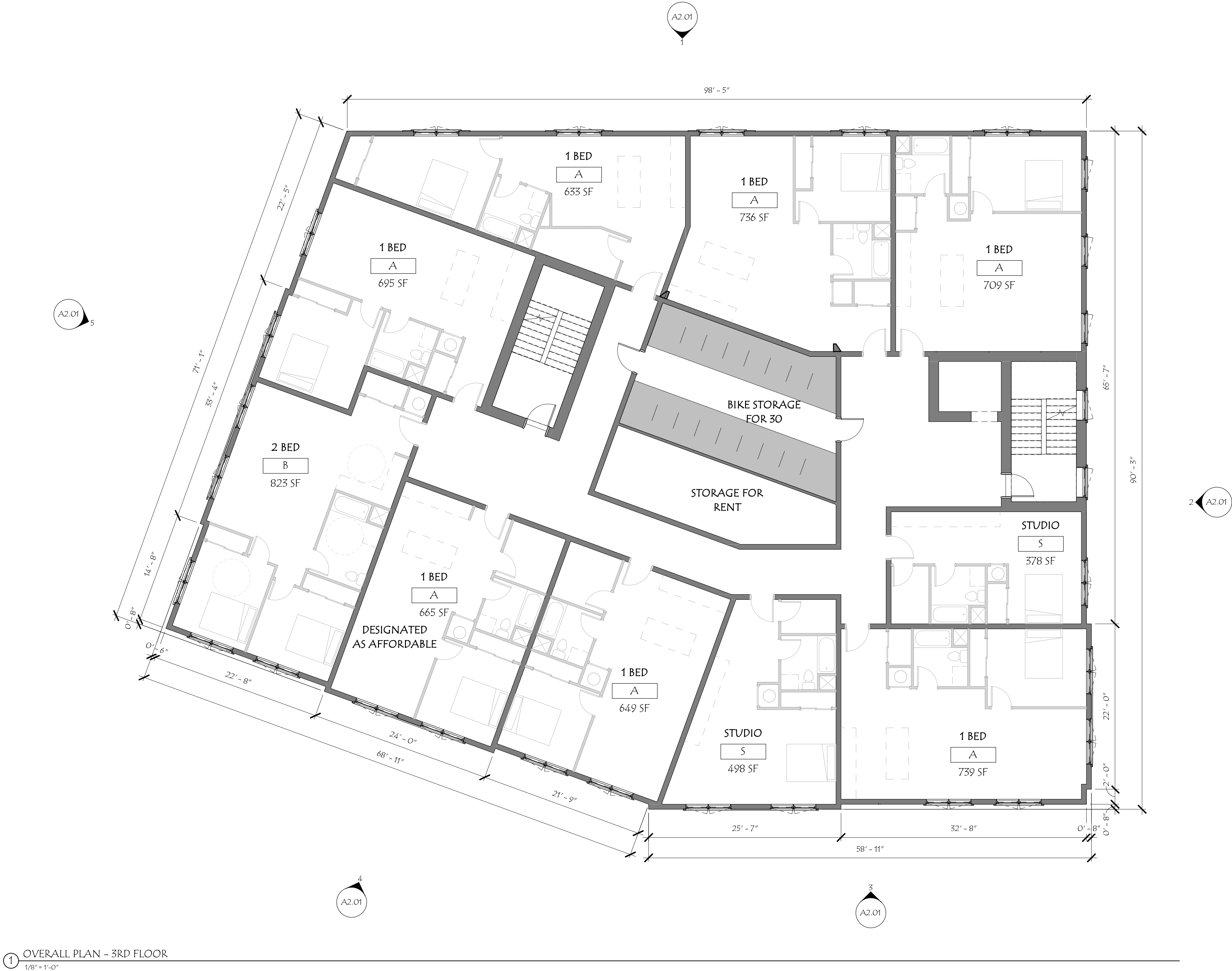
UNIT MATRIX:

	#	%
THIRD FLOOR:		
STUDIO	2 UNIT	20%
1 BED	7 UNITS	70%
2 BED	1 UNIT	10%

TOTAL:		
STUDIO	10 UNITS	27%
1 BED	23 UNITS	62%
2 BED	4 UNITS	11%

TOTAL	37 UNITS
-------	----------

NOTE:
PRELIMINARY UNIT INTERNAL LAYOUT SHOWN, FINAL LAYOUT MAY VARY



1 OVERALL PLAN - 4TH FLOOR
1/8" = 1'-0"



Title:
OVERALL PLAN -
FOURTH FLOOR

A1.04

Scale:
1/8" = 1'-0"

Drawn By:
PPS

Checked By:
ALW

Project No.:
2020051

Date:
03/01/21

Revisions:

#	Description	Date

200 MASS AVE MULTI

190-200 MASSACHUSETTS AVE
ARLINGTON, MA

NOT FOR
CONSTRUCTION



1 OVERALL PLAN - 5TH FLOOR
1/8" = 1'-0"



UNIT MATRIX:

	#	%
FIFTH FLOOR:		
STUDIO	4 UNIT	44%
1 BED	4 UNITS	44%
2 BED	1 UNIT	11%
TOTAL:		
STUDIO	10 UNITS	27%
1 BED	23 UNITS	62%
2 BED	4 UNITS	11%
TOTAL	37 UNITS	

NOTE:
PRELIMINARY UNIT INTERNAL LAYOUT SHOWN, FINAL LAYOUT MAY VARY



NOT FOR
CONSTRUCTION

200 MASS AVE MULTI
190-200 MASSACHUSETTS AVE
ARLINGTON, MA

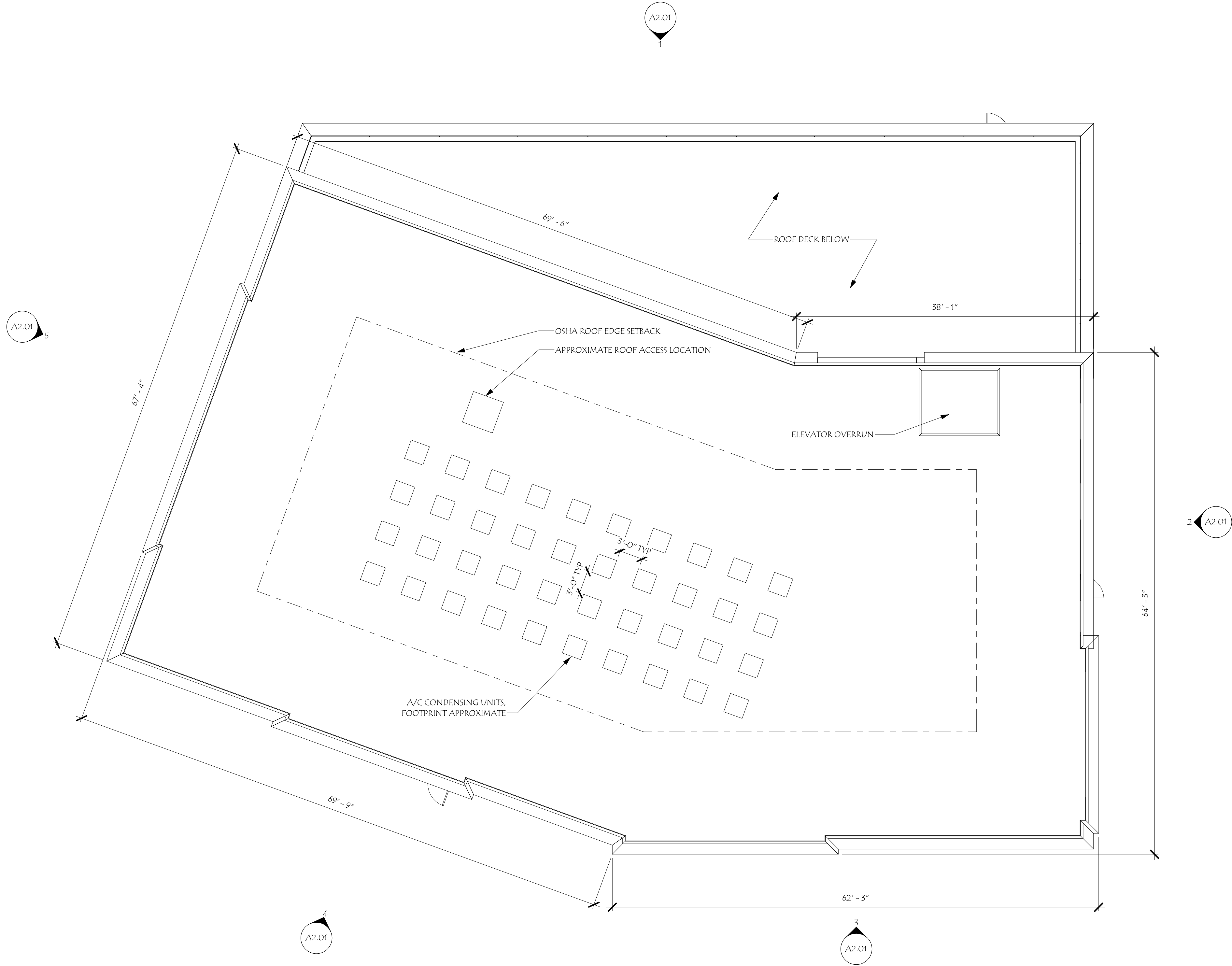
Revisions:	Date
#	Description

1/8" = 1'-0"	PPS	ALW	2020051	03/01/21
Scale:	Drawn By:	Checked By:	Project No.:	Date:

Title:
OVERALL PLAN -
FIFTH FLOOR

A1.05

1 OVERALL PLAN - ROOF
1/8" = 1'-0"



Title:
OVERALL PLAN -
ROOF

A1.06

Scale:
Drawn By:
Checked By:
Project No.:
Date:

1/8" = 1'-0"
PPS
ALW
2020051
03/01/21

Revisions:			
#	Description	Date	

200 MASS AVE MULTI
190-200 MASSACHUSETTS AVE
ARLINGTON, MA

NOT FOR
CONSTRUCTION



- MATERIAL NOTES:
- BRICK BASE TO MATCH EXISTING BRICK BANK.
 - PAINTED FIBER CEMENT PANEL, TYP. UPPER STORIES.
 - CORNICE/TRIM TO BE FIBER CEMENT OR AZEK WITH METAL FLASHING PAINTED TO MATCH.



NOTE:
CONTEXT BUILDING HEIGHTS AND ELEVATIONS APPROXIMATED.

NOT FOR
CONSTRUCTION

200 MASS AVE MULTI

190-200 MASSACHUSETTS AVE
ARLINGTON, MA



③ CHANDLER STREET ELEVATION
1" = 20'-0"



② LAKE STREET ELEVATION
1" = 20'-0"



① MASS AVE STREET ELEVATION
1" = 20'-0"

Title: STREET ELEVATIONS	Revisions:		Date	
	#	Description		
Scale: Drawn By: Checked By: Project No.: Date:	1" = 20'-0"	PPS		
		ALW		
		2020051		
		03/01/21		
A9.01		3/10/2021 12:08 PM		



200 MASS AVE MULTI

190-200 MASSACHUSETTS AVE
ARLINGTON, MA

Revisions:		
#	Description	Date

Scale:	PPS
Drawn By:	ALW
Checked By:	2020051
Project No.:	03/01/21
Date:	

Title: BANK CORNER RENDER	A9.02



NOT FOR
CONSTRUCTION

200 MASS AVE MULTI

190-200 MASSACHUSETTS AVE
ARLINGTON, MA

Revisions:		Date
#	Description	

Scale:	PPS
Drawn By:	ALW
Checked By:	2020051
Project No.:	03/01/21
Date:	

Title: COMMERCIAL CORNER RENDER	
	A9.03



NOT FOR
CONSTRUCTION

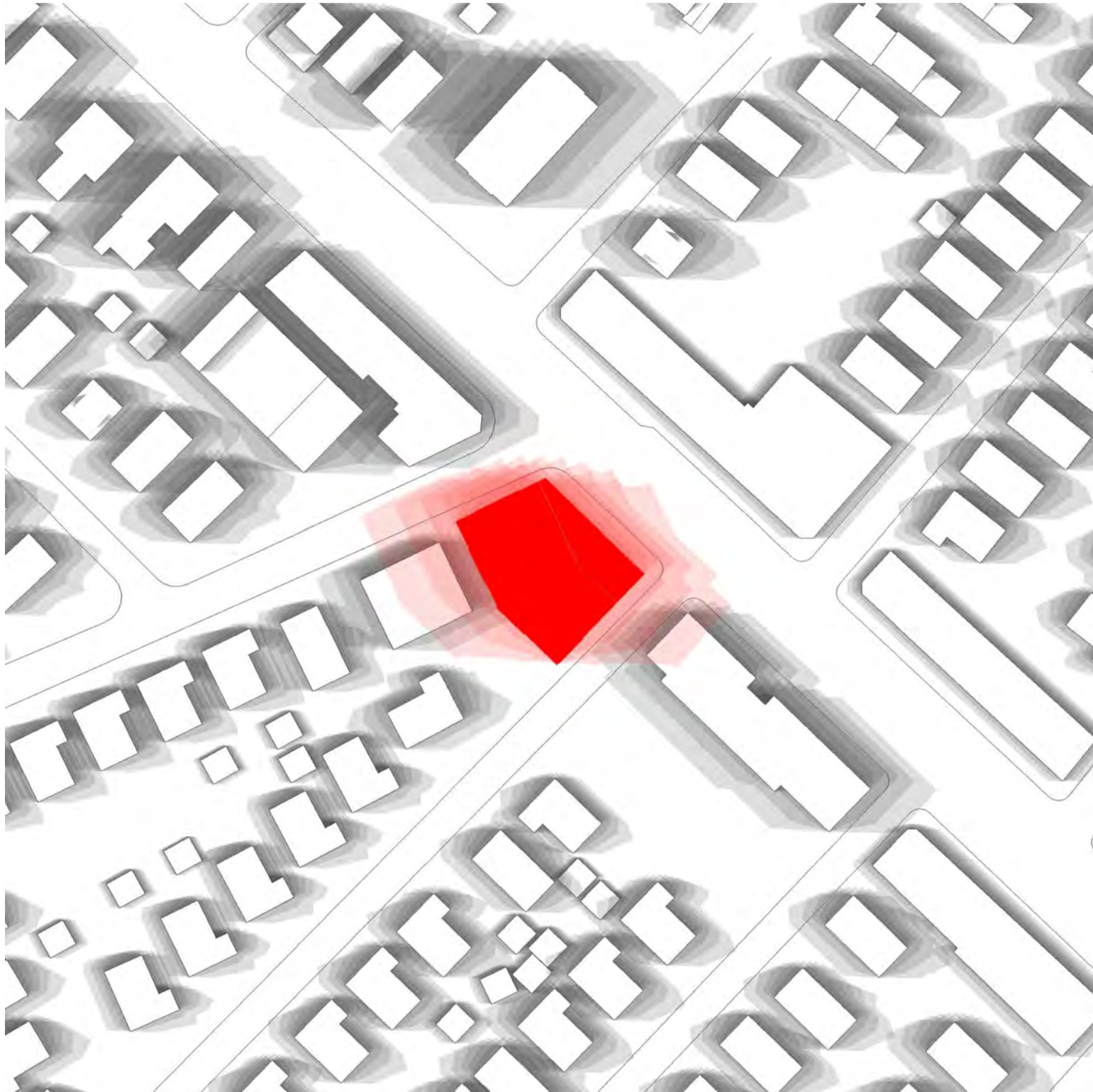
200 MASS AVE MULTI

190-200 MASSACHUSETTS AVE
ARLINGTON, MA

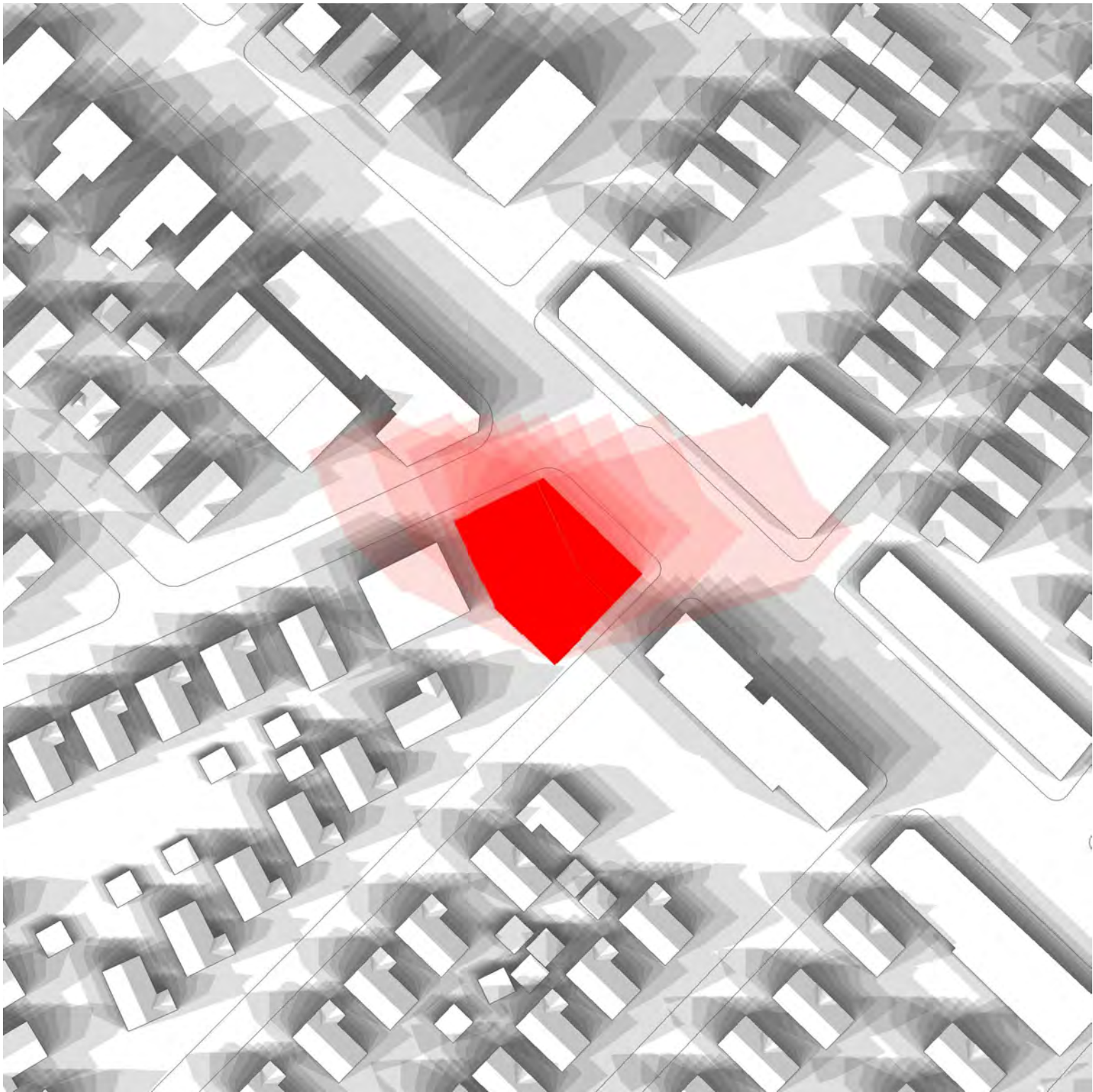
Revisions:	#	Description	Date

Scale:	PPS
Drawn By:	ALW
Checked By:	
Project No.:	2020051
Date:	03/01/21

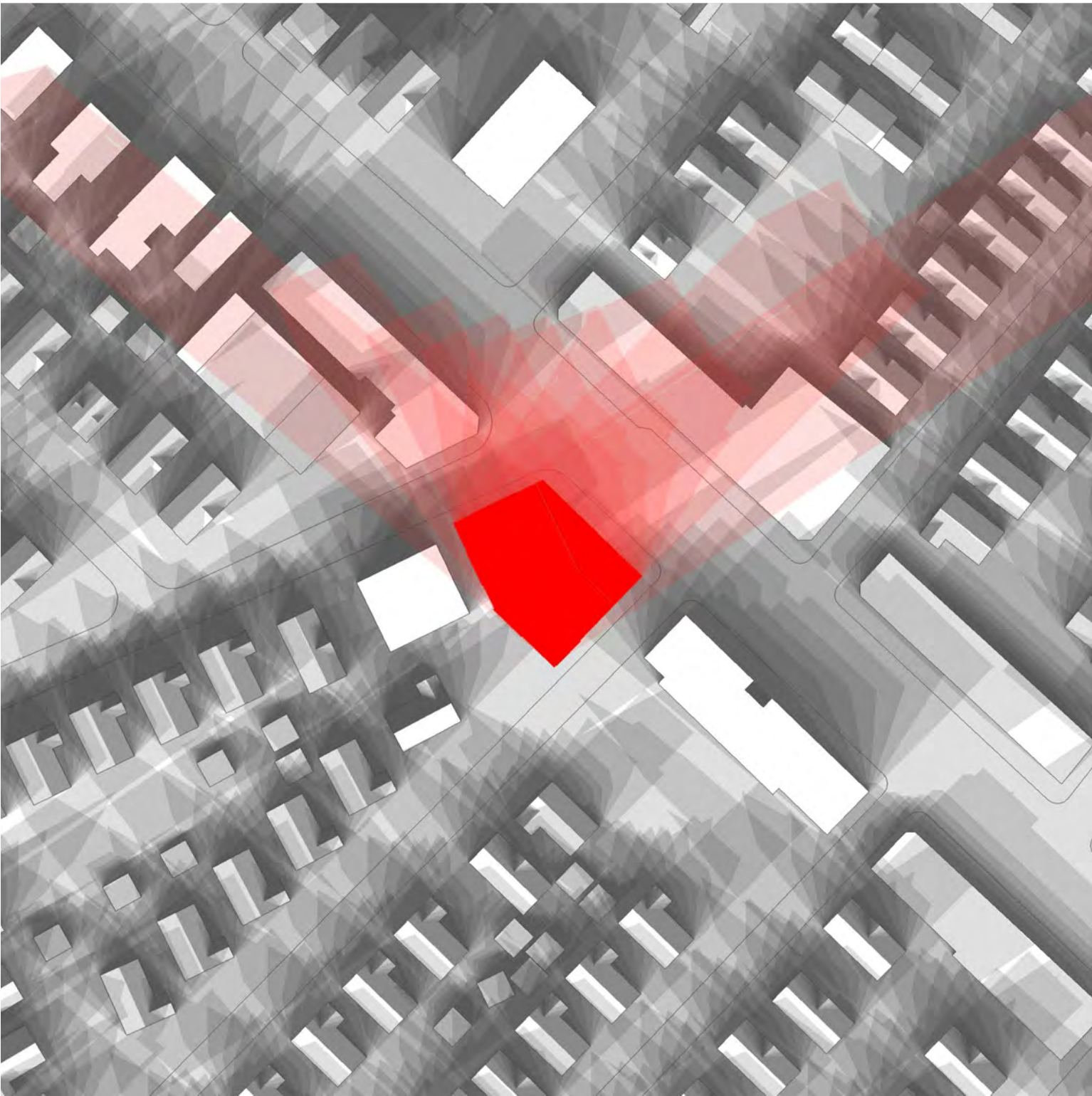
Title:	ROOF DECK RENDER
	A9.04



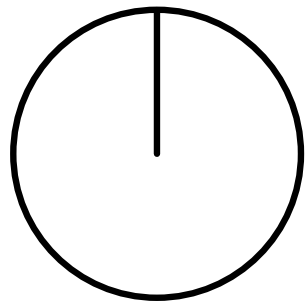
SUMMER
8:00AM - 4:00PM UTC-5



SPRING/FALL
8:00AM - 4:00PM UTC-5



WINTER
8:00AM - 4:00PM UTC-5



NOTE:
THE BUILDING AND LANDSCAPE SHADOWS ILLUSTRATED IN THE RENDERINGS BELOW ARE DIGITALLY GENERATED AND THEORETICAL REPRESENTATIONS OF THOSE SHADOWS CAST AT A SPECIFIC MOMENT IN TIME ON A SPECIFIC DAY. WHILE ACCURATE TO THE INPUT CALENDAR AND SUN LOCATION DATA, THE ACTUAL PERCEPTION OF SHADOWS INCLUDING THEIR SIZE, SHAPE AND INTENSITY OR DARKNESS, MAY BE SUBJECTIVE AND VARIABLE TO THE SPECIFIC OBSERVER. AS SUCH, THIS INFORMATION SHOULD BE UTILIZED AS GENERAL COMMENTARY, AND CAUSE FOR FURTHER DISCUSSION OR STUDY AS NEEDED.

NOT FOR
CONSTRUCTION

200 MASS AVE MULTI

190-200 MASSACHUSETTS AVE
ARLINGTON, MA

Revisions:			
#	Description	Date	

Scale:	PPS
Drawn By:	ALW
Checked By:	2020051
Project No.:	03/01/21
Date:	

Title: SOLAR STUDIES	A9.05
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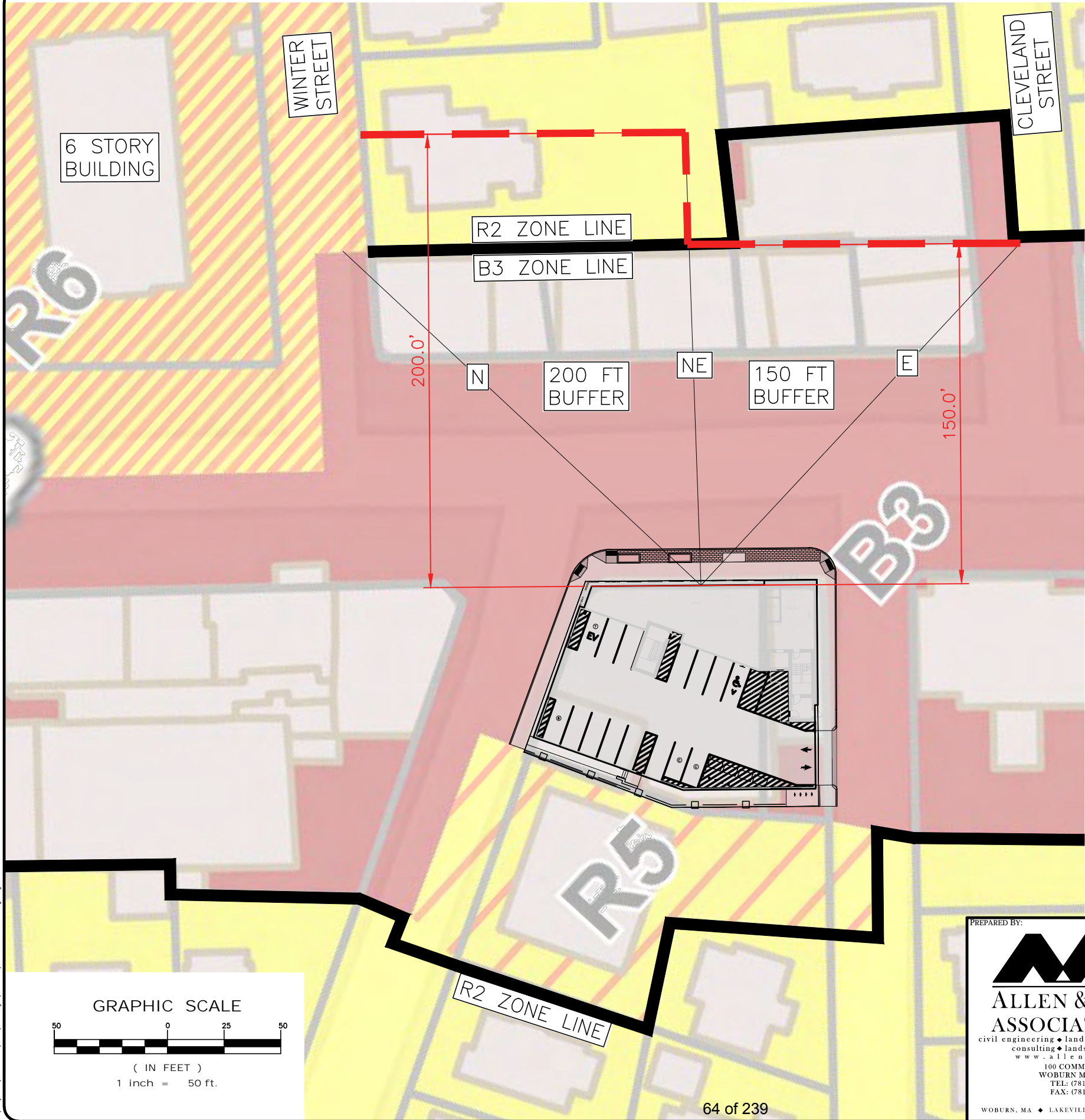


Market Square Architects investigated the impact of the greater maximum height limit as proposed through two methods.

Solar studies were conducted on the Solstices and the Equinoxes, from 8:00AM to 4:00 PM UTC-5; topography and existing structures were included in the model, and conclusions were drawn by extrapolating this data. These studies demonstrate that the proposed structure will only cast shadows on existing structures in a R2 zone during the evenings of winter months, when long shadows are already cast by existing structures and foliage. Furthermore, the specific properties of these existing structures (Cleveland St.) are farther than the boundary which triggers the height buffer (see FIG-01, Allen & Major Associates), such that no existing structure in an R2 zone close enough to trigger the height buffer is anticipated to be impacted by a shadow.

Massing studies were conducted to understand the context of the neighborhood. While the existing use of this specific site is shorter than proposed, the existing use of the surrounding context and neighborhood precedents a building of this proposed massing. An existing 5 story structure (215 Massachusetts Ave) stands on a lot roughly two hundred feet diagonally from the proposed construction. Observing the surrounding context, the proposed building exaggerates the required upper story stepback, minimizing the impact of the taller structure and creating a pedestrian friendly streetscape along Mass Ave which harmonizes with the massing of the adjacent existing structures (Capitol Theater, 204 Massachusetts Ave, and Leader Bank Corporate Offices, 180 Massachusetts Ave). The building does not immediately abut a R2 zoned property, therefor we believe an adequate buffer remains between the proposed construction and existing R2 lots.

Conclusively, we believe that utilizing the taller maximum height allowed would have minimal impact on the nearby R2 lots.

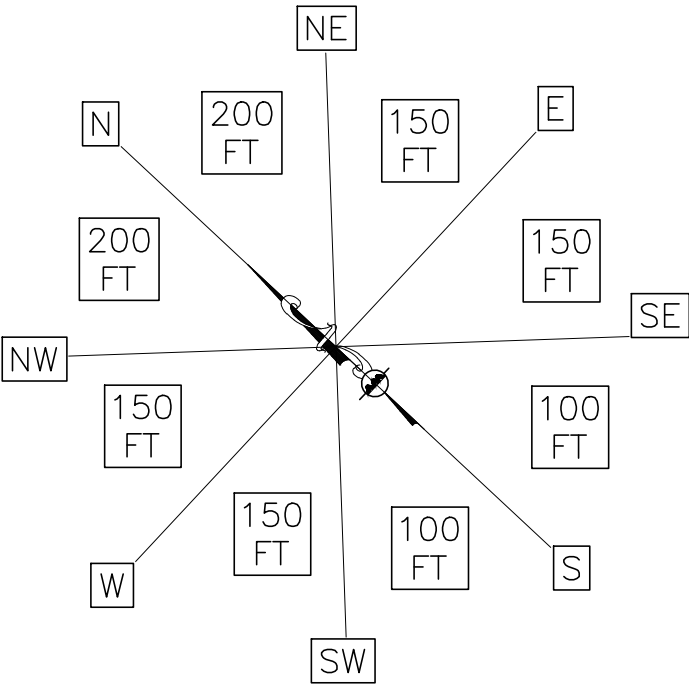


5.3.19. Reduced Height Buffer Area

- A. When two different maximum height limits are specified for the same zoning district in any Table of Dimensional and Density Regulations in this Section 5, the lower limit shall apply to any lot or part of a lot located in a height buffer area unless it is determined as a specific finding of a special permit that the properties in the adjacent R0, R1, R2, or OS district would not be adversely affected due to existing use or topographic condition. A height buffer area is defined as a lot or part of a lot which is located at a lesser distance from any land, not within a public way, in an R0, R1, R2 or OS district than the following:

5-10 / DISTRICTS & USES

Land in R0, R1, R2, OS is located	Lower height shall apply
Between northwest and northeast	Within 200 feet
Easterly, between northeast and southeast, or westerly between northwest and southwest	Within 150 feet
Southerly, between southeast and southwest	Within 100 feet



R:\Projects\2729-02\Civil\Drawings\Current\C-2729-02_Zoning.dwg

PREPARED BY:



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WOBURN, MA • LAKEVILLE, MA • MANCHESTER, NH

PROJECT:

190 & 192-200
MASSACHUSETTS AVE

APPLICANT/OWNER: 192-200 MASSACHUSETTS AVE, LLC

DESIGNED BY: ARM

CHECKED BY:

FIGURE No.
FIG-01

THIS DRAWING HAS BEEN PREPARED IN ELECTRONIC FORMAT. CLIENT/CLIENT'S REPRESENTATIVE OR CONSULTANT MAY BE PROVIDED COPIES OF DRAWINGS AND SPECIFICATIONS ON MAGNETIC MEDIA FOR HIS/HER INFORMATION AND USE FOR SPECIFIC APPLICATION TO THIS PROJECT. DUE TO THE POTENTIAL THAT THE MAGNETIC INFORMATION MAY BE MODIFIED UNINTENTIONALLY OR OTHERWISE, ALLEN & MAJOR ASSOCIATES, INC. MAY REMOVE ALL INDICATION OF THE DOCUMENT'S AUTHORSHIP ON THE MAGNETIC MEDIA. PRINTED REPRESENTATIONS OF THE DRAWINGS AND SPECIFICATIONS ISSUED SHALL BE THE ONLY RECORD COPIES OF ALLEN & MAJOR ASSOCIATES, INC.'S WORK PRODUCT.

NORTHERN REDUCED HEIGHT BUFFER			
PROJECT NO.	2729-02	DATE:	10/28/2020
SCALE:	1"=50'	SHEET REF:	-
DESIGNED BY:	ARM	CHECKED BY:	-



LEED v4 for Building Design and Construction: Homes and Multifamily Lowrise

Project Checklist

Project Name: 190-200 Massachusetts Ave, Arlington, MA 02476

Date: 12/18/2020

Y ? N
Y

Credit Integrative Process

2

9 6 0 Location and Transportation 15

Y Prereq Floodplain Avoidance Required

PERFORMANCE PATH

Credit LEED for Neighborhood Development Location 15

PRESCRIPTIVE PATH

4 4 Credit Site Selection 8

3 Credit Compact Development 3

2 Credit Community Resources 2

2 Credit Access to Transit 2

2 2 3 Sustainable Sites 7

Y Prereq Construction Activity Pollution Prevention Required

Y Prereq No Invasive Plants Required

1 1 Credit Heat Island Reduction 2

1 2 Credit Rainwater Management 3

2 Credit Non-Toxic Pest Control 2

4 4 2 Water Efficiency 12

Y Prereq Water Metering Required

PERFORMANCE PATH

Credit Total Water Use 12

PRESCRIPTIVE PATH

4 2 Credit Indoor Water Use 6

4 Credit Outdoor Water Use 4

10 21 6 Energy and Atmosphere 38

Y Prereq Minimum Energy Performance Required

Y Prereq Energy Metering Required

Y Prereq Education of the Homeowner, Tenant or Building Manager Required

PERFORMANCE PATH

Credit Annual Energy Use 29

BOTH PATHS

2 3 Credit Efficient Hot Water Distribution System 5

1 1 Credit Advanced Utility Tracking 2

1 Credit Active Solar Ready Design 1

1 Credit HVAC Start-Up Credentialing 1

PRESCRIPTIVE PATH

Y Prereq Home Size Required

1 2 Credit Building Orientation for Passive Solar 3

2 Credit Air Infiltration 2

2 Credit Envelope Insulation 2

3 Credit Windows 3

2 2 Credit Space Heating & Cooling Equipment 4

EA PRESCRIPTIVE PATH (continued)

3 Credit Heating & Cooling Distribution Systems 3

2 1 Credit Efficient Domestic Hot Water Equipment 3

2 Credit Lighting 2

2 Credit High Efficiency Appliances 2

4 Credit Renewable Energy 4

5 4 1 Materials and Resources 10

Y Prereq Certified Tropical Wood Required

Y Prereq Durability Management Required

1 Credit Durability Management Verification 1

2 2 Credit Environmentally Preferable Products 4

3 Credit Construction Waste Management 3

1 1 Credit Material Efficient Framing 2

9 5 2 Indoor Environmental Quality 16

Y Prereq Ventilation Required

Y Prereq Combustion Venting Required

Y Prereq Garage Pollutant Protection Required

Y Prereq Radon-Resistant Construction Required

Y Prereq Air Filtering Required

Y Prereq Environmental Tobacco Smoke Required

Y Prereq Compartmentalization Required

2 1 Credit Enhanced Ventilation 3

2 Credit Contaminant Control 2

3 Credit Balancing of Heating and Cooling Distribution Systems 3

1 Credit Enhanced Compartmentalization 1

2 Credit Enhanced Combustion Venting 2

2 Credit Enhanced Garage Pollutant Protection 2

3 Credit Low Emitting Products 3

1 0 5 Innovation 6

Y Prereq Preliminary Rating Required

5 Credit Innovation 5

1 Credit LEED AP Homes 1

0 0 4 Regional Priority 4

1 Credit Regional Priority: Specific Credit 1

1 Credit Regional Priority: Specific Credit 1

1 Credit Regional Priority: Specific Credit 1

1 Credit Regional Priority: Specific Credit 1

40 42 23 TOTALS Possible Points: 110

Certified: 40 to 49 points, Silver: 50 to 59 points, Gold: 60 to 79 points, Platinum: 80 to 110

MEMORANDUM

DATE: December 21, 2020

TO: Frank Pasciuto
Member Manager
192 Massachusetts Ave LLC
Framina LLC
455 Massachusetts Avenue, Ste 1
Arlington, MA 02474

FROM: Robert J. Michaud, P.E. – Managing Principal
Daniel A. Dumais, P.E. – Senior Project Manager

RE: **Proposed Mixed-Use Development**
190-200 Massachusetts Avenue, Arlington, Massachusetts

MDM Transportation Consultants, Inc. (MDM) has conducted this traffic impact statement (TIS) for a proposed mixed-use development to be located at 190-200 Massachusetts Avenue in Arlington, Massachusetts. The location of the site relative to the adjacent roadway network is shown in **Figure 1**. This TIS provides a summary of the baseline traffic characteristics of the Site and adjacent roadways/ intersections, evaluates existing and projected site trip generation, quantifies incremental traffic impacts of the Site development on area roadways, and evaluates safety-related conditions at key study locations that provide access to the Site.

Key findings of the assessment are as follows:

- *Safety Characteristics.* A review of the crash data indicated that no immediate safety countermeasures are warranted based on the crash history at the study intersections. Likewise, available sight lines at the site driveway intersection with Chandler Street will exceed the sight line requirements published by AASHTO.
- *Public Transportation.* The project is in close proximity to an extensive sidewalk system, three nearby multi-use paths (Minuteman Bikeway, Alewife Greenway Bike Path, and Alewife Linear Path), adjacent MBTA bus routes, and the nearby redline subway connections. A review of Census data for Arlington indicates alternative transportation (transit, walk, and bike) use of 50% for residents of the immediate study area (Census tract 3561).

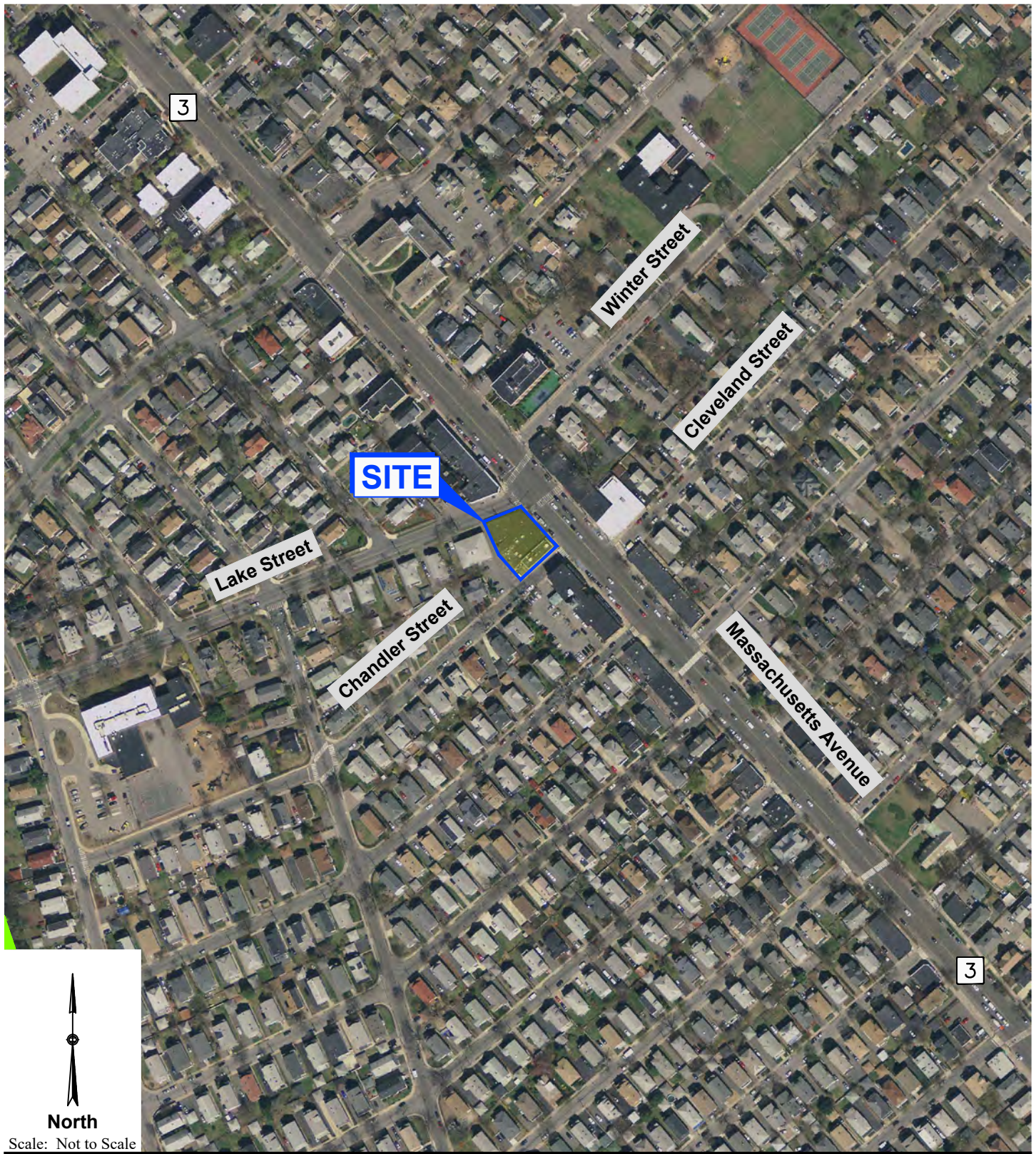


Figure 1

Site Location

- *Reduced Trip Generation.* Based on ITE methodology the proposed mixed-use development is estimated to reduce peak hour trips by up to 25 vehicle trips and approximately 228 fewer vehicle trips on a weekday relative to existing/historic site uses.
- *Qualitative Impact Assessment.* the incremental traffic associated with the proposed development will result in a reduction in vehicular activity compared to the existing/historic uses; consequently, no material impact in operating conditions at the study intersections and area roadways is projected as a result of the redevelopment.

In summary, access improvements, pedestrian/bicycle improvements, and TDM program are outlined under *Recommendations and Conclusions*. These improvements will establish a framework of minimizing Site traffic impacts and encourage non-motorized travel modes and pedestrian accommodation that is compatible with other projects in the area.

PROJECT DESCRIPTION

The Site consists of approximately 0.26± acres of land located along the western side of Massachusetts Avenue between Lake Street and Chandler Street. The existing Site includes 10,500± sf of commercial/retail buildings with a curb cut along Chandler Street providing 2 off-street parking spaces. The development program envisions retaining approximately 1,735 sf of commercial space and constructing 37 residential apartments. Accordingly, net new trip activity for the site will be limited to the proposed 37 residential units after further offset by the reduction in commercial tenants in the current buildings. Access to the Site will be via a full access/egress driveway along Chandler Street with off-street parking for 15 vehicles. The preliminary site layout prepared by Allen & Major Associates; Inc. is presented in **Figure 2**.

STUDY AREA

The following intersections will comprise the proposed study area:

- Massachusetts Avenue at Lake Street/Winter Street (Signal)
- Massachusetts Avenue at Chandler Street
- Chandler Street at Site Driveway

BASELINE TRAFFIC & SAFETY CHARACTERISTICS

An overview of roadway classification and geometric characteristics is provided below for the adjacent study roadway.

ARB FOR THE REQUIRED NUMBER OF

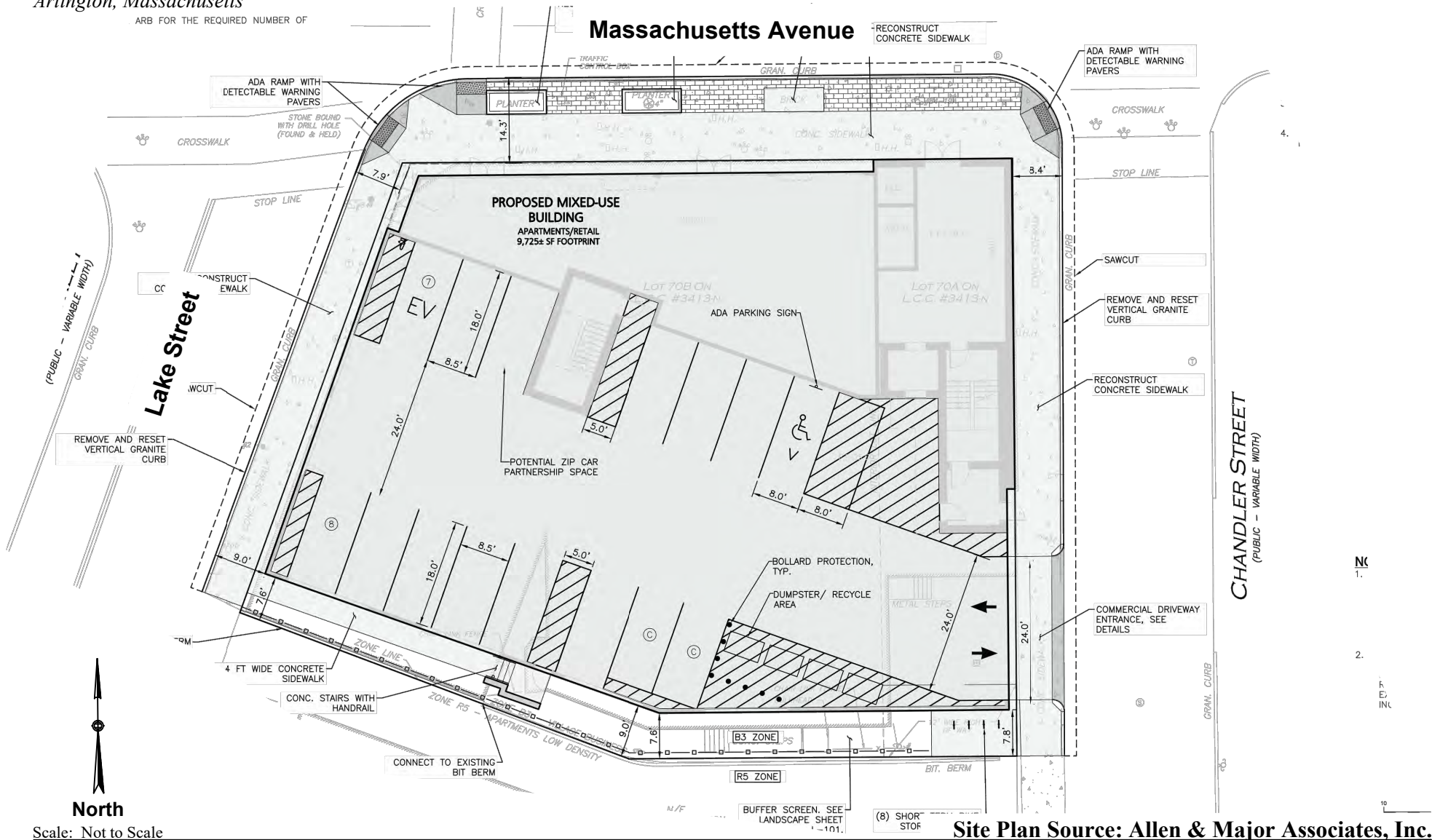


Figure 2

Preliminary Site Plan

Roadways

Massachusetts Avenue (Route 3)

Adjacent to the Site, Massachusetts Avenue is a southeast-northwest roadway under local (town) jurisdiction and is classified by the Massachusetts Department of Transportation (MassDOT) as an Urban Principal Arterial roadway. The roadway provides a connection to Arlington Center in the west and connects to Alewife Brook Parkway and Cambridge to the east. Massachusetts Avenue provides three travel lanes in the site area, one westbound and two eastbound, separated by a double yellow centerline. Additional turn lanes are provided at its major intersections. Sidewalks and on-street parking are provided along both the northern and southern side of the roadway, and bike lanes are provided in both directions. Land use along Massachusetts Avenue in the immediate study area includes a mix of commercial and residential uses.

Lake Street

Lake Street is a two-lane, east-west roadway under local (town) jurisdiction and is classified by the Massachusetts Department of Transportation (MassDOT) as an Urban Minor Arterial roadway. The roadway provides a connection to Route 2 in the west and connects to Massachusetts Avenue to the east. Lake Street provides two travel lanes, one in each direction, separated by a double yellow centerline. Sidewalks are provided along both the northern and southern side of the roadway, and no on-street parking is allowed. Land use along Lake Street in the immediate study area includes a mix of uses including the commercial and residential uses, Hardy Elementary School, and access to the Minuteman Commuter Bikeway.

Chandler Street

Adjacent to the Site, Chandler Street is a one-lane, northbound roadway under local (town) jurisdiction and is classified by the Massachusetts Department of Transportation (MassDOT) as a local roadway. Chandler Street is approximately 24 feet wide and allows on-street parking along the eastern side of the roadway. Sidewalks are provided along both the eastern and western side of the roadway. Land use along Chandler Street in the immediate study area includes a mix of commercial and residential uses.

Intersection Crash History

In order to identify crash trends and safety characteristics for study area intersections, crash data were obtained from MassDOT for the Town of Arlington for the five-year period covering 2015 – 2019 (the most recent full year of data available from MassDOT). A summary of the crash data with crash rates for the study intersections with reported crashes is provided in **Table 1** with detailed data provided in the **Attachments**. A review of Highway Safety Improvement Project (HSIP) locations was also conducted.

TABLE 1
INTERSECTION CRASH SUMMARY
2015 THROUGH 2019¹

Data Category	STUDY LOCATION		
	Massachusetts Ave at Lake Street/ Winter Street	Massachusetts Ave at Chandler Street	Chandler Street at Site Driveway/ 180 Mass Ave
Traffic Control	Signalized	Unsignalized	Unsignalized
<i>Year:</i>			
2015	9	2	0
2016	2	0	1
2017	5	1	0
2018	2	1	0
<u>2019</u>	<u>3</u>	<u>0</u>	<u>0</u>
Total	21	4	1
<i>Type:</i>			
Angle	3	3	1
Rear-End	6	1	0
Head-On	0	0	0
Sideswipe	10	0	0
Single Vehicle	1	0	0
Other/Unknown	1	0	0
<i>Severity:</i>			
P. Damage Only	20	4	1
Personal Injury	1	0	0
Fatality	0	0	0
Not Reported	0	0	0
<i>Conditions:</i>			
Dry	19	1	1
Wet	2	2	0
Snow	0	0	0
Not Reported/Other	0	1	0
<i>Time:</i>			
7:00 to 9:00 AM	2	0	0
4:00 to 6:00 PM	3	1	0
Rest of Day	16	3	1

¹Source: MassDOT Crash Database

²Crashes per million entering vehicles

As summarized in **Table 1**:

- *Massachusetts Avenue at Lake Street*: A total of twenty-one (21) crashes were reported near the signalized intersection of Lake Street with Massachusetts Avenue resulting in approximately 4 crashes per year. The reported crashes included three (3) angle type collisions, six (6) rear-end type collisions, and ten (10) sideswipe-type collisions. Seventy-six percent (76%) of the crashes resulted in property-damage only, generally indicative of low-speed crashes. No fatalities or pedestrian-related incidents were reported during the study period. There was one collision that involved a bicycle and an eastbound vehicle in 2018 during the weekday evening peak hour that resulted in property damage only with the driver listed as disregarding the signal and roadway markings.
- *Massachusetts Avenue at Chandler Street*: A total of four (4) crashes were reported near the unsignalized intersection of Chandler Street with Massachusetts Avenue resulting in approximately 1 crash per year. The reported crashes included three (3) angle type collisions and one (1) rear-end type collisions. No fatalities or pedestrian-related incidents were reported during the study period.
- *Chandler Street at Site Driveway*: One (1) crash was reported at the unsignalized intersection of 180 Massachusetts Avenue (Bank) rear parking lot with Chandler Street. The reported crash was an angle-type collision that resulted in property damage only. No fatalities or pedestrian-related incidents were reported during the study period.

MDM notes that the safety review indicates that Massachusetts Avenue is listed as a HSIP bicycle cluster between Tufts Street in Arlington and Magoun Street in Cambridge. However, after an extensive review of crash records at the study intersections and with the limited number of pedestrian/bicycle related crashes as described above, no additional safety countermeasures are warranted.

Sight Line Evaluation

An evaluation of sight lines was conducted at the proposed site driveway location to ensure that minimum recommended sight lines are available to safely exit onto Chandler Street. The evaluation documents existing sight lines for vehicles as they relate to Chandler Street with comparison to recommended guidelines for the regulatory speed limit.

The American Association of State Highway and Transportation Officials' (AASHTO) standards¹ reference two types of sight distance which are relevant at the site driveway intersection on Chandler Street: stopping sight distance (SSD) and intersection sight distance (ISD). Sight lines for critical vehicle movements at the proposed site driveway intersection with Chandler Street were compared to minimum SSD and ISD for the regulatory speed limit in the Site vicinity.

Stopping Sight Distance

Sight distance is the length of roadway visible to the motorist to a fixed object. The minimum sight distance available on a roadway should be sufficiently long enough to enable a below-average operator, traveling at or near a regulatory speed limit, to stop safely before reaching a stationary object in its path, in this case, a vehicle exiting the site driveway onto Chandler Street. The SSD criteria are defined by AASHTO based on design and operating speeds, anticipated driver behavior and vehicle performance, as well as physical roadway conditions. SSD includes the length of roadway traveled during the perception and reaction time of a driver to an object, and the distance traveled during brake application on wet level pavement. Adjustment factors are applied to account for roadway grades where applicable.

SSD was estimated in the field using AASHTO standards for driver's eye (3.5 feet) and object height equivalent to the taillight height of a passenger car (2.0 feet) for the eastbound Chandler Street approaches to the proposed site driveway. **Table 2** presents a summary of the available SSD for the Chandler Street approach to the site driveway and AASHTO's recommended SSD for the regulatory travel speed.

¹ A policy on Geometric Design of Highways and Streets, American Association of State Highway and Transportation Officials (AASHTO), 2018.

TABLE 2
STOPPING SIGHT DISTANCE SUMMARY
CHANDLER STREET APPROACH TO SITE DRIVEWAY

Approach/ Travel Direction	Available SSD	AASHTO Recommended ¹	
		Regulatory Speed Limit ²	Criteria Satisfied
Northbound	>400 Feet	155 Feet	Yes

¹Recommended sight distance based on AASHTO, A Policy on Geometric Design of Highways and Streets. Based on driver height of eye of 3.5 feet to object height of 2.0 feet and adjustments for roadway grade.

²Prima-Facie Speed Limit is 25 mph.

As summarized in **Table 2** analysis results indicate that the available sight lines will exceed AASHTO's recommended SSD criteria for the proposed site driveway based on the regulatory speeds along Chandler Street.

Intersection Sight Distance

Clear sight lines provide sufficient sight distance for a stopped driver on a minor-road approach to depart from the intersection and enter or cross the major road. As stated under AASHTO's Intersection Sight Distance (ISD) considerations, "...If the available sight distance for an entering ...vehicle is at least equal to the appropriate stopping sight distance for the major road, then drivers have sufficient sight distance to avoid collisions...To enhance traffic operations, intersection sight distances that exceed stopping sight distances are desirable along the major road." AASHTO's ISD criteria are defined into several "cases". For the proposed unsignalized site driveway location, which is proposed to be under "STOP" control with left egress movements, the ISD in question relates to the ability to turn left from the proposed driveway at its intersection with Chandler Street.

Available ISD was estimated in the field using AASHTO standards for driver's eye (3.5 feet), object height (3.5 feet) and decision point (between 8 from the edge of the travel way) for the eastbound direction along Chandler Street. **Table 3** presents a summary of the available ISD for the departure from the proposed site driveway and AASHTO's minimum and ideal ISD recommendations.

TABLE 3
INTERSECTION SIGHT DISTANCE SUMMARY
SITE DRIVEWAY DEPARTURE TO CHANDLER STREET

View Direction	Available ISD	AASHTO Minimum ¹	AASHTO Ideal ²
		Regulatory Speed Limit ²	Regulatory Speed Limit ²
<i>Looking South</i>	>400 Feet	155 Feet	280 Feet

¹Recommended sight distance based on AASHTO, A Policy on Geometric Design of Highways and Streets. Based on driver height of eye of 3.5 feet and an object height of 3.5 feet. Minimum value as noted represents SSD per AASHTO guidance. Adjustments for driveway grade have been made as needed.

² Prima-Facie Speed Limit is 25 mph.

The results of the ISD analysis presented in **Table 3** indicate that the available sight lines looking west from the site driveway onto Chandler Street will exceed the recommended sight line criteria from AASHTO. MDM recommends that any new plantings (shrubs, bushes) or physical landscape features to be located within driveway sight lines should also be maintained at a height of 2 feet or less above the adjacent existing roadway grade to ensure unobstructed lines of sight.

As a further safety feature, it is recommended that the Proponent install an audible and visual warning device at the garage exit to alert pedestrians of pending motorists exiting the driveway.

Alternative Transportation Facilities

The existing pedestrian and transit facilities within the study area are shown graphically in **Figure 3**. The project is in close proximity to an extensive sidewalk system, nearby multi-use paths, adjacent MBTA bus routes, and nearby redline subway stations. The Massachusetts Bay Transit Authority (MBTA) operates the following bus routes in the study area and could be used as an alternative mode of travel to/from the site. A review of census data for Arlington indicates alternative transportation (transit, walk, and bike) use of 50% for residents of the immediate study area (Census tract 3561). Specific route and schedule information and Census data is provided in the **Attachments**.

- *MBTA Subway Service:* The redline subway runs from Alewife Station to South Station with another stop at Harvard Square. Both Alewife and Harvard stops are accessible from the Site via nearby MBTA Bus Routes. Service generally runs 5:00 am to 1:00 am on both weekdays and weekends with headways of approximately 9 minutes on peak times and 15-25 minutes during off-peak times.



Figure 3

- *Route 77:* This route provides service between Arlington Heights and Harvard Square via Massachusetts Avenue (Route 3). Service is provided along Massachusetts Avenue with a bus stop located less than ¼ mile from Site near the intersection of Massachusetts Avenue and Lake Street. Several connections to other bus routes in the service area are available as is a direct connection to the Redline T service. Service is generally provided seven (7) days a week and operates between 5:00 am and 1:30 am on weekdays, between 5:00 am and 1:30 am on Saturdays and between 6:00 am and 1:30 am on Sundays.

- *Route 79:* This route provides service between Arlington Heights and Alewife Station via Massachusetts Avenue (Route 3) and Alewife Brook Parkway. Service is provided along Massachusetts Avenue with a bus stop located less than ¼ mile from Site near the intersection of Massachusetts Avenue and Lake Street. Several connections to other bus routes in the service area are available as is a direct connection to the Redline T service. Service is generally provided five (5) days a week and operates between 7:00 am and 7:30 pm on weekdays with no service on weekends.

- *Route 350:* This route provides service between North Burlington and Alewife Station via Cambridge Street (Route 3A), Massachusetts Avenue (Route 3), and Alewife Brook Parkway. Service is provided along Massachusetts Avenue with a bus stop located less than ¼ mile from Site near the intersection of Massachusetts Avenue and Lake Street. Several connections to other bus routes in the service area are available as is a direct connection to the Redline T service. Service is generally provided seven (7) days a week and operates between 6:00 am and 11:00 pm on weekdays, between 6:30 am and 10:00 pm on Saturdays and between 7:00 am and 7:30 pm on Sundays.

- *Minuteman Bikeway:* This bikeway is a 10-mile trail connecting Bedford, Lexington, Arlington, and Cambridge. Access to the Bikeway from the Site can be made at its crossing of Lake Street located approximately ¼ mile away. The Bikeway provides a direct connection to the Alewife MBTA Station as well as other bike/pedestrian trails in the area including the nearby Alewife Greenway Bike Path and Alewife Linear Path.

- *Alewife Greenway Bike Path:* This bikeway is approximately a 2-mile trail connecting Cambridge and eastern Arlington. Access to the Bikeway from the Site can be made via a connection to the Minuteman Bikeway near Magnolia Park. The Bike Path follows along Alewife Brook Parkway and provides a direct connection from the Alewife MBTA Station to Mystic Valley Parkway in Arlington as well as local commercial and recreational spaces such as Dilboy Fields, Pool and Tennis Courts.

- *Alewife Linear Path:* This bikeway is a 2-mile trail connecting Cambridge and Somerville. Access to the Bikeway from the Site can be made via a connection to the Minuteman Bikeway near Alewife Station. The Bikeway provides a direct connection from the Alewife MBTA Station to Davis Square in Somerville.

TRIP GENERATION

The trip generation estimates for the proposed redevelopment of the Site are provided for the weekday morning and weekday evening periods, which correspond to the critical analysis periods for the proposed use and adjacent street traffic flow. The methodology utilized to estimate the future trip-generation characteristics of the proposed development are summarized below. In accordance with EEA/MassDOT guidelines, the traffic generated by the proposed mixed-use development was estimated using trip rates published in ITE's *Trip Generation* for the Land Use Code (LUC) based on trip rates for Multifamily Housing (Mid-Rise) (LUC 221) and Shopping Center (LUC 820) for the commercial space. Census data for the immediate area indicates a transit use mode share of approximately 50% for residential uses. Therefore, trips associated with the residential use have been adjusted to reflect the census tract data. Projected site trip generation for the proposed development is summarized in **Table 2**. Trip generation calculations are provided in the **Attachments**.

TABLE 2
TRIP-GENERATION SUMMARY

Period	Residential ¹	Retail Use ²	Total Trips
<i>Weekday Morning Peak-Hour:</i>			
Enter	2	1	3
<u>Exit</u>	<u>5</u>	<u>1</u>	<u>6</u>
Total	7	2	9
<i>Weekday Evening Peak-Hour:</i>			
Enter	5	3	8
<u>Exit</u>	<u>3</u>	<u>4</u>	<u>7</u>
Total	8	7	15
<i>Daily</i>	102	66	168

¹Based on ITE LUC 221 (Multifamily Housing (Mid-Rise)) applied to 37 Units adjusted to reflect 50% non-auto mode share per US Census tract data.

²Based on ITE LUC 820 (Shopping Center) applied to 1,735 sf.

As summarized in **Table 2**, the proposed mixed-use development is estimated to generate approximately 9 vehicle trips during the weekday morning peak hour (3 entering and 6 exiting) and 15 vehicle trips during the weekday evening peak hour (8 entering and 7 exiting). On a daily basis, the development is estimated to generate approximately 168 vehicle trips on a weekday.

Table 3 summarizes the trip generation comparison for the project with respect to total new trips when adjusted for credit of existing/historic Site uses.

TABLE 3
TRIP-GENERATION COMPARISON

Period	Existing Uses ¹	Proposed Use ²	Net New Trips
<i>Weekday Morning Peak-Hour:</i>			
Enter	6	3	-3
Exit	<u>4</u>	<u>6</u>	<u>+2</u>
Total	10	9	-1
<i>Weekday Evening Peak-Hour:</i>			
Enter	19	8	-11
Exit	<u>21</u>	<u>7</u>	<u>-14</u>
Total	40	15	-25
<i>Daily</i>	396	168	-228

¹Based on ITE LUC 820 (Shopping Center) applied to 10,500 sf.

²Based on ITE LUC 221 (Multifamily Housing (Mid-Rise)) applied to 37 Units adjusted to reflect 50% non-auto mode share per US Census tract data and ITE LUC 820 (Shopping Center) applied to 1,735 sf.

As summarized in **Table 3**, the proposed mixed-use development is estimated to generate a net reduction in vehicle trips relative to existing/historic uses at the site. Specifically, the project will generate approximately 1 *fewer* vehicle trip (3 fewer entering and 2 more exiting) during the weekday morning peak hour and 25 *fewer* vehicle trips (11 fewer entering and 14 fewer exiting) during the weekday evening peak hour. On a daily basis, the development is estimated to generate approximately 228 *fewer* vehicle trips on a weekday. Trip generation calculations are provided in the **Attachments**.

QUALITATIVE IMACT ASSESSMENT

This section provides a quantitative statement of impact and describes the changes in trip generation associated with the development relative to Baseline conditions. Based on ITE trip generation methodology, the project will result in a no material change in traffic during the weekday morning peak hour and a modest decrease of approximately 25 vehicular trips (60% decrease) during the weekday evening peak hour. Relative traffic increases for the proposed project represents an inconsequential change in area roadway volumes - a level of change that falls well within normal day-to-day fluctuations in traffic traveling along Massachusetts Avenue and entering and exiting the study intersections. Consequently, no material impact in operating conditions at the study intersections and area roadways is projected as a result of the project.

RECOMMENDATIONS AND CONCLUSIONS

In summary, the proposed mixed-use development is estimated to result in a net reduction in trips compared to the existing commercial use of the property. However, several mitigation actions are identified to support the project to ensure that site access meets applicable safety criteria, to enhance neighborhood walking/bicycling and to reduce dependency on single-occupant auto use. These include (a) access-related improvements, (b) pedestrian and bicycle accommodations, and (c) Transportation Demand Management (TDM) elements as summarized below.

Access/Egress Improvements

- *Signs and Pavement Markings.* A STOP sign (R1-1) and STOP line pavement marking should be installed on the driveway approach to Chandler Street. “Left Turn Only” arrow and pavement marking should also be installed on the driveway approach to enhance the one-way restriction along Chandler Street. The sign and pavement markings shall conform to Manual on Uniform Traffic Control Devices (MUTCD) standards.
- *Audible Warning Device.* As a further safety feature, the Proponent should install an audible and visual warning device at the garage exit to alert pedestrians of pending motorists exiting the driveway.
- *Maintain Clear Driveway Sight Lines.* New plantings (shrubs, bushes) and structures (walls, fences, etc.) should be designed and maintained at a height of 2 feet or less above the finished driveway elevation within the sight triangle areas to provide unobstructed visibility to oncoming vehicles.

Pedestrian and Bicycle Accommodations

- *Pedestrian Accommodation.* The design incorporates sidewalks that connect the proposed building entrances with the parking areas and to the existing sidewalk along Massachusetts Avenue, Chandler Street, and Lake Street. The sidewalk along the property frontage will also be reconstructed to enhance the pedestrian environment along the property.
- *Bicycle Amenities.* The Proponent will incorporate secure and weather-protected indoor bicycle racks within the site (60 total spaces) to encourage and facilitate this mode of transportation to/from the Site by residents and building tenants. Additional short-term bike racks (8 exterior spaces) will also be provided near the building.

Transportation Demand Management (TDM)

A preliminary list of potential TDM program elements may include the following, subject to refinement of the development program and further evaluation by the Proponent:

- *Unbundled Parking.* The Proponent will consider unbundling residential parking to provide an option for residents to rent fewer or no parking spaces with their unit.
- *Bicycle Facilities and Promotion.* The Proponent will provide bicycle parking in excess of the zoning ordinance requirements to including weather protected racks for residents and supplemental racks for visitors and employees proximate to the building entrance. Specifically, this includes weather-protected bicycle storage within the site (60 spaces total within the property) plus 8 supplemental short-term exterior bike spaces.
- *Improve Walking Conditions.* The sidewalk along the property frontage will be reconstructed to enhance pedestrian accommodation to and along the property. The Proponent proposed to replace the bench within the sidewalk area fronting the property to accommodate pedestrians that are waiting for public transportation along Massachusetts Avenue. The Proponent will reconstruct the sidewalk and ramp system adjacent to the Site and provide enhanced planter boxes.
- *Electric Vehicle Parking Space.* Proponent will provide one (1) charging station for electric vehicles in the parking garage.
- *Car-Sharing Service Parking Space.* Proponent will consider the inclusion of one (1) parking space dedicated to a car-sharing service, such as ZipCar or other equivalent service.

CONCLUSIONS

In summary, MDM finds that the incremental traffic associated with the proposed development will result in a net reduction in vehicular activity compared to the existing/historic uses. Consequently, no material impact in operating conditions at the study intersections and area roadways is projected as a result of the redevelopment. Implementation of access improvements, proposed pedestrian improvements, and a TDM program will establish a framework of minimizing Site traffic impacts and will encourage non-motorized travel modes and pedestrian accommodation that is compatible with other projects in the area.

ATTACHMENTS

- ☐ Crash Data
- ☐ Sight Line Calculations
- ☐ Public Transportation Information
- ☐ Trip Generation
- ☐ Census Information

□ Crash Data

Mass Ave at Lake Street

Crash Num	City Town Name	Crash Date	Crash Severity	Crash Time	Number of Vehicles	First Harmful Event	Manner of Collision	Non-Motorist Type (/	Road Surface	C X	Y
3993282	ARLINGTON	01/11/2015	Property damage o	2:29 PM	2	Collision with motor vehicle in traffic	Angle	Dry	229447.7	906201.7	
4034761	ARLINGTON	04/15/2015	Property damage o	3:44 PM	2	Collision with motor vehicle in traffic	Sideswipe, same direction	Dry	229448.7	906200.6	
4036637	ARLINGTON	04/29/2015	Not Reported	8:29 AM	2	Collision with motor vehicle in traffic	Sideswipe, same direction	Dry	229439.6	906210.5	
4039082	ARLINGTON	05/01/2015	Property damage o	5:54 AM	2	Collision with motor vehicle in traffic	Rear-end	Dry	229448.7	906200.6	
4045800	ARLINGTON	05/24/2015	Property damage o	10:02 PM	2	Collision with motor vehicle in traffic	Rear-end	Dry	229448.7	906200.6	
4050184	ARLINGTON	06/05/2015	Not Reported	2:28 PM	2	Collision with motor vehicle in traffic	Rear-end	Dry	229448.7	906200.6	
4071582	ARLINGTON	08/07/2015	Non-fatal injury	4:56 PM	2	Collision with motor vehicle in traffic	Sideswipe, opposite direction	Dry	229448.7	906200.6	
4115437	ARLINGTON	11/19/2015	Not Reported	3:35 PM	2	Collision with motor vehicle in traffic	Angle	Dry	229448.7	906200.6	
4122759	ARLINGTON	12/10/2015	Not Reported	6:27 AM	2	Collision with motor vehicle in traffic	Sideswipe, same direction	Dry	229448.7	906200.6	
4137503	ARLINGTON	01/17/2016	Property damage o	2:51 PM	2	Collision with motor vehicle in traffic	Rear-end	Dry	229448.7	906200.6	
4247681	ARLINGTON	09/13/2016	Property damage o	12:09 PM	1	Collision with utility pole	Single vehicle crash	Dry	229448.7	906200.6	
4372115	ARLINGTON	06/03/2017	Property damage o	1:12 PM	1	Collision with motor vehicle in traffic	Sideswipe, same direction	Dry	229456.9	906192.4	
4388089	ARLINGTON	07/08/2017	Property damage o	12:11 PM	2	Collision with motor vehicle in traffic	Sideswipe, same direction	Dry	229439.6	906210.5	
4447110	ARLINGTON	10/26/2017	Property damage o	9:42 AM	2	Collision with parked motor vehicle	Sideswipe, same direction	Wet	229439.6	906210.5	
4492857	ARLINGTON	11/27/2017	Property damage o	12:07 PM	2	Collision with motor vehicle in traffic	Sideswipe, same direction	Dry	229448.7	906200.6	
4517088	ARLINGTON	03/20/2018	Property damage o	5:01 PM	1	Collision with pedalcycle (bicycle, tricycle, unicycle, pedal car)	Unknown	P3: Cyclist	Dry	229448.7	906200.6
4596395	ARLINGTON	06/03/2017	Property damage o	1:12 PM	2	Collision with motor vehicle in traffic	Sideswipe, same direction	Dry	229448.3	906201.1	
4618623	ARLINGTON	11/06/2018	Property damage o	7:03 PM	2	Collision with motor vehicle in traffic	Rear-to-rear	Wet	229441.5	906208.5	
4774799	ARLINGTON	11/14/2019	Property damage o	8:07 AM	3	Collision with motor vehicle in traffic	Rear-end	Dry	229441.5	906208.5	
4776600	ARLINGTON	11/15/2019	Property damage o	5:33 PM	2	Collision with motor vehicle in traffic	Angle	Dry	229448.7	906200.6	
4783683	ARLINGTON	11/25/2019	Property damage o	1:13 PM	2	Collision with motor vehicle in traffic	Sideswipe, same direction	Dry	229448.7	906200.6	

Mass Ave at Chandler Street

Crash Num	City Town Name	Crash Date	Crash Severity	Crash Time	Number of Vehicles	First Harmful Event	Manner of Collision	Non-Motorist Type (/	Road Surface	C X	Y
4070001	ARLINGTON	07/31/2015	Not Reported	12:28 PM	2	Collision with parked motor vehicle	Rear-end	Dry	229479.5	906169.7	
4088269	ARLINGTON	09/17/2015	Not Reported	10:55 PM	1	Collision with motor vehicle in traffic	Angle	Not reported	229479.5	906169.7	
4355229	ARLINGTON	04/21/2017	Property damage o	4:43 PM	2	Collision with motor vehicle in traffic	Angle	Wet	229479.5	906169.7	
4593671	ARLINGTON	09/12/2018	Property damage o	1:02 PM	3	Collision with motor vehicle in traffic	Angle	Wet	229479.5	906169.7	

Chandler Street at Site Driveway

Crash Num	City Town Name	Crash Date	Crash Severity	Crash Time	Number of Vehicles	First Harmful Event	Manner of Collision	Non-Motorist Type (/	Road Surface	C X	Y
4157362	ARLINGTON	02/26/2016	Property damage o	3:15 PM	2	Collision with motor vehicle in traffic	Angle	Dry	229449.8	906143.2	

□ Sight Line Calculations

Stopping Sight Distance - Regulatory Speed

Chandler Street approaches to Site Driveway

		SPEED (MPH)	BRAKE REACTION DISTANCE (FT)	BRAKING DISTANCE (FT)	CALCULATED STOPPING SIGHT DISTANCE (FT)
Direction 1	NB	25	91.875	59.9	151.8

INPUTS

Direction 1

Travel Direction	NB
Speed	25
Grade	0
t	2.5
a	11.2

Stopping Sight Distance (SSD) - Source: AASHTO

SSD = Reaction Distance + Brake Distance

Reaction Distance = $1.47 \times t \times V$

Brake Distance = $V^2 / (30 \times ((a/32.2) + G))$

Where:

t = reaction time (sec)

V = travel speed (mph)

G= roadway grade

a - deceleration rate (ft/sec²)

Intersection Sight Distance Calculations

Source: *A Policy on Geometric Design of Highways and Street, 7th Edition*; AASHTO; 2018.

$$ISD = 1.47 * V * t$$

V = speed

t = time gap

t = 7.5 s for a passenger car for Left Turn from a Stop

t = 6.5 s for a passenger car for Right Turn from a Stop

Chandler Street

$$ISD = 1.47 * 25 * 7.5 = 276 \text{ ft } \mathbf{SAY \ 280 \ ft}$$

(left-turn from a stop)

□ Public Transportation Information

T Fares				
PRICE PER TRIP	Local Bus	Bus + Bus	Rapid Transit	Bus + Rapid Transit
CharlieCard	\$1.70	\$1.70	\$2.40	\$2.40
CharlieTicket	\$2.00	\$2.00	\$2.90	\$4.90**
Cash-on-Board	\$2.00	\$4.00	\$2.90	\$4.90**
Student/Youth*	\$0.85	\$0.85	\$1.10	\$1.10
Senior/TAP**	\$0.85	\$0.85	\$1.10	\$1.10
UNLIMITED TRIP PASSES				
1-Day	\$12.75	\$12.75	\$12.75	\$12.75
7-Day	\$22.50	\$22.50	\$22.50	\$22.50
Monthly	\$55.00	\$55.00	\$90.00	\$90.00
Senior/TAP Monthly \$30.00/month for unlimited travel on Local Bus and Rapid Transit				

VALID PASSES: LinkPass (\$84.50/mo.); Student/Youth LinkPass* (\$30/mo.); Senior/TAP LinkPass* (\$30/mo.); and express bus, commuter rail, and boat passes.

FREE FARES: Children 11 and under ride free when accompanied by an adult; Blind Access CharlieCard holders ride free; if using a guide, the guide rides free.

* Requires Student CharlieCard or Youth CharlieCard. Student CharlieCards are available to students through participating middle schools and high schools. Youth CharlieCards are available through community partners in the Boston metro area. Visit www.mbtta.com/youthpass for details.

** Requires Senior/TAP CharlieCard, available to Medicare cardholders, seniors 65+, and persons with disabilities.

*** For Silver Line SL4 or SL5 pay \$2.75. Also see "transfers."

TRANSFERS

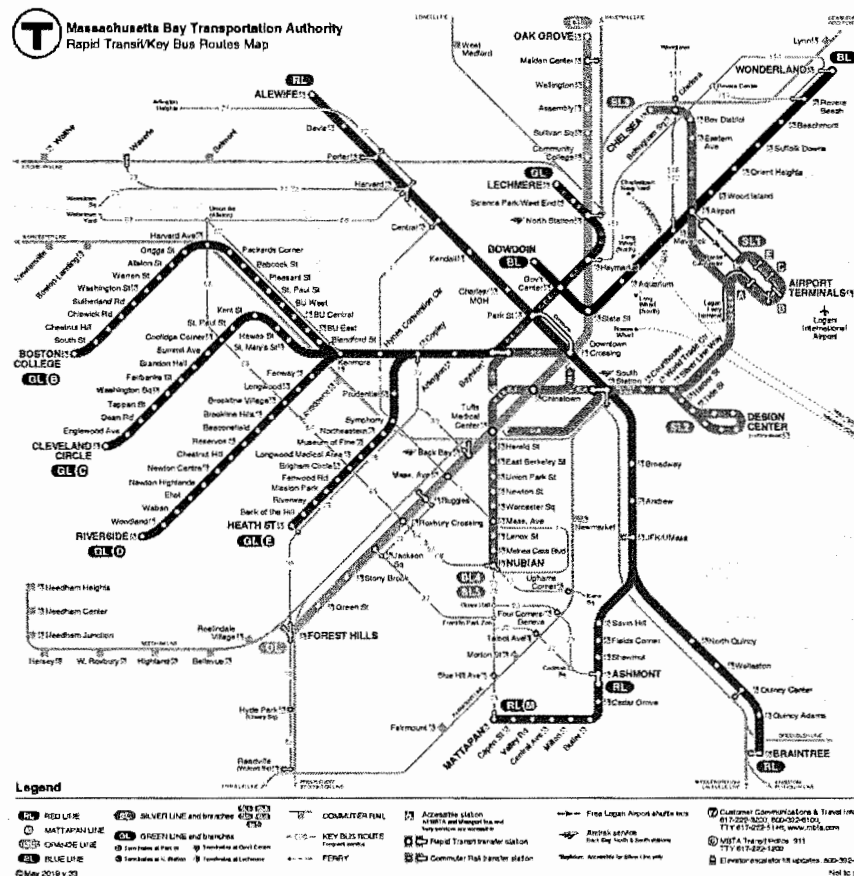
If paying with a CharlieTicket or CharlieCard, discounted transfers that are available are automatic — just use the same ticket or card throughout your trip. If paying with cash onboard a vehicle, free transfers are only allowed between rapid transit lines and inside paid platform areas at gated stations.

SCHEDULES

Schedules are available at the following stations: Park Street, Airport, Malden, Harvard, Haymarket (Green Line Level), Back Bay and Downtown Crossing (Orange Line Level) or see station personnel. Schedules also available at the Transportation Building (10 Park Plaza), 45 High St., and online at mbta.com.

For real-time subway and bus tracking, download the Transit app on any smartphone.

Massachusetts Bay Transportation Authority Rapid Transit/Key Bus Routes Map



Rapid Transit

Effective August 30, 2020

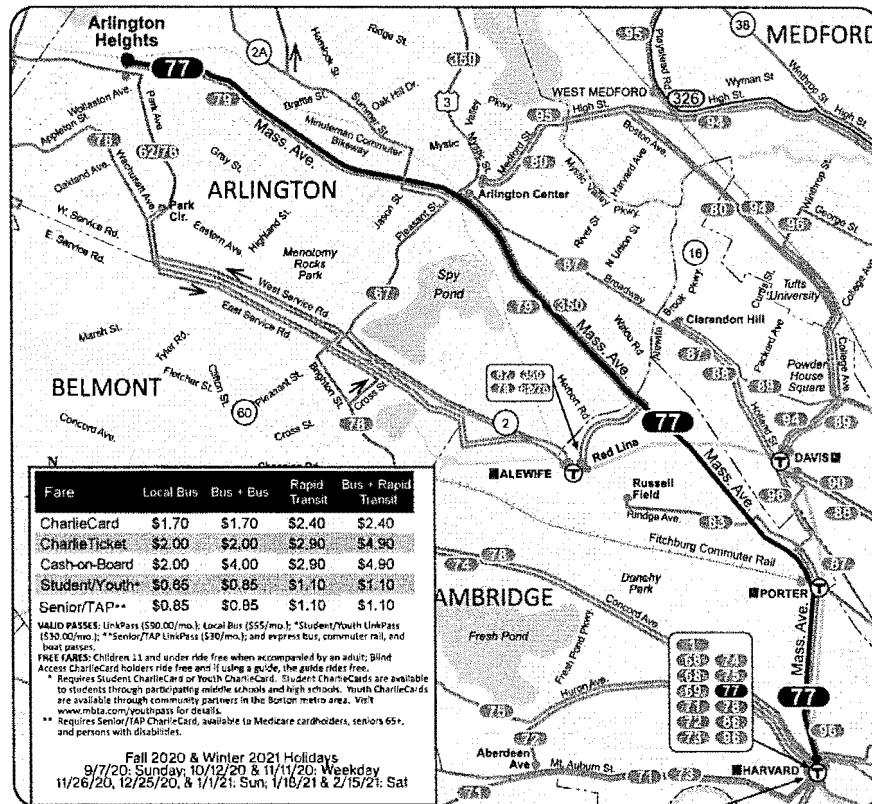


Massachusetts Bay Transportation Authority **massDOT**

Information 617-222-3200 • 1-800-392-6100
(TTY) 617-222-5146 • www.mbtta.com

Rapid Transit Line	Weekday				Saturday			Sunday			Peak Service: Weekdays 7 AM - 9 AM, 4 PM - 6:30 PM
	First Trip	Peak	Off Peak	Last Trip	First Trip	Arriving Every	Last Trip	First Trip	Arriving Every	Last Trip	
Red Line											Green Line Notes: New and ongoing infrastructure projects may result in diversions on some branches at various times. See GL service changes at mbta.com/GLwork View service alerts at mbta.com/alerts * E trains start/end at North Station for Green Line Extension work – shuttles provided between North Station and Lechmere. More: mbta.com/GLEwork 1 - The first two C train AM northbound trips run through to Lechmere Station on weekdays. 2 - The first B and second C train AM northbound trips run through to Lechmere Station on weekends. 3 - On weekdays the 12:27 AM trip (weekends the 12:32 AM trip) from Heath St is the last connecting train to other lines downtown. The 12:37 AM and 12:47 AM trips (weekends the 12:47 AM trip) from Heath St. runs in service to Lechmere with no guaranteed connections. 4 - Early morning service from Lechmere to Riverside departs Lechmere at 5:00 AM. f - After exiting Ted Williams Tunnel bus will only service World Trade Center and South Station stops. w - Last trips wait at some stations, primarily in the Downtown area, for connecting service. Departure times are approximate. Fall 2020 & Winter 2021 Holidays 9/7/20: Sunday, 10/12/20 & 11/11/20: Weekday 11/26/20, 12/25/20, & 1/1/21: Sun, 1/18/21 & 2/15/21: Sat
Alewife Braintree	5:24 AM 5:08 AM	9 mins	12-16 mins	12:20 AM 12:17 AM	5:24 AM 5:09 AM	12-16 mins	12:20 AM 12:17 AM	6:06AM 6:00AM	12-16 mins	12:20 AM 12:17 AM	
Alewife Ashmont	5:16 AM 5:16 AM	9 mins	12-16 mins	w 12:27 AM w 12:30 AM	5:16 AM 5:16 AM	12-16 mins	w 12:27 AM w 12:30 AM	6:00AM 6:00AM	12-16 mins	w 12:27 AM w 12:30 AM	
"M" Ashmont Mattapan	5:17 AM 5:05 AM	5 mins	8-12 Day 26 Late	w 1:05 AM 12:53 AM	5:15 AM 5:05 AM	8-12 Day 26 Early/Late	w 1:05 AM 12:53 AM	6:03AM 5:51AM	8-12 Day 26 Early/Late	w 1:05 AM 12:53 AM	
Blue Line											
Wonderland	5:13 AM	5 mins	9-13 mins	12:28 AM	5:25 AM	9-13 mins	12:28 AM	5:58AM	9-13 mins	12:28 AM	
Orient Heights	5:14 AM			12:33 AM	5:13 AM		12:33 AM	6:03AM		12:33 AM	
Bowdoin	5:30 AM			w 1:00 AM	5:29 AM		w 1:00 AM	6:21AM		w 1:00 AM	
Orange Line											
Oak Grove	5:16 AM	6 mins	9-11 mins	w 12:30 AM	5:16 AM	9-11 mins	w 12:30 AM	6:00AM	9-11 mins	w 12:30 AM	
Forest Hills	5:16 AM			w 12:28 AM	5:16 AM		w 12:28 AM	6:00AM		w 12:28 AM	
Green Line*											
B Boston College Park Street	5:01 AM 5:45 AM	5-6 mins	7-9 mins	12:10 AM w 12:52 AM	4:45 AM ² 5:40 AM	7-8 mins	12:09 AM w 12:52 AM	5:20AM ² 6:12AM	9 mins	12:10 AM w 12:52 AM	
C Cleveland Circle North Station	4:57 AM ¹ 5:48 AM	6-8 mins	9-11 mins	12:07 AM w 12:46 AM	4:50 AM ² 5:30 AM	9-10 mins	12:10 AM w 12:46 AM	5:30AM ² 6:06AM	10 mins	12:10 AM w 12:46 AM	
D Riverside Government Ctr.	4:56 AM 5:45 AM	6 mins	8-11 mins	12:05 AM w 12:49 AM	4:55 AM 5:38 AM	8-9 mins	12:02 AM w 12:49 AM	5:25AM 6:10AM	11-12 mins	12:05 AM w 12:49 AM	
E Lechmere [*] Heath Street	5:00 AM ⁴ 5:45 AM	6-7 mins	8-10 mins	12:30 AM 12:47 AM ³	5:01 AM 5:39 AM	10 mins	12:30 AM 12:47 AM ³	5:35AM 6:15AM	12 mins	12:30 AM 12:47 AM ³	
Silver Line											
SL1 Logan Airport South Station	5:38 AM 5:40 AM	7-12 mins	10-12 mins	f 1:03 AM w 1:02 AM	5:48 AM 5:45 AM	10-12 mins	1:15 AM w 12:59 AM	5:50AM 6:12AM	10-12 mins	f 1:12 AM w 1:00 AM	
SL2 Design Center South Station	6:07 AM 5:44 AM	6 mins	14-16 mins	12:37 AM 12:50 AM	6:03 AM 5:47 AM	14-16 mins	12:35 AM 12:45 AM	6:51AM 6:35AM	14-16 mins	12:51 AM 12:36 AM	
SL3 Chelsea Station South Station	4:55 AM 4:20 AM	6-11 mins	8-13 mins	f 1:05 AM w 12:35 AM	5:30 AM 4:56 AM	8-13 mins	1:22 AM w 12:55 AM	6:26AM 5:53AM	8-13 mins	f 1:25 AM w 12:55 AM	
SL4 Nubian Station South Station	5:20 AM 5:38 AM	6-11 mins	6-11 mins	12:20 AM 12:37 AM	5:23 AM 5:40 AM	13-20 mins	12:20 AM 12:40 AM	6:02AM 6:20AM	13-20 mins	12:20 AM 12:40 AM	
SL5 Nubian Station Downtown Xing	5:15 AM 5:32 AM	11-14 mins	13-20 mins	12:51 AM w 1:07 AM	5:19 AM 5:34 AM	6-11 mins	12:43 AM w 1:00 AM	6:00AM 6:16AM	6-11 mins	12:25 AM w 12:47 AM	

Route 77 Arlington Heights - Harvard Station



77

Effective August 30, 2020

Arlington Heights- Harvard Station

Serving

- Porter Station
- Arlington High School
- Arlington Center
- Harvard University
- Elm Street
- Red Line
- Fitchburg Commuter Rail



Massachusetts Bay Transportation Authority

Information 617-222-3310 • 1-800-392-4000
 (TTY) 617-222-5396 • www.mbta.com

77 Weekday

Inbound				Outbound			
Leave Arlington Heights	Arrive Arlington Center	Lv/Arrive North Camb.	Arrive Harvard Square	Leave Harvard Station	Arrive North Camb.	Arrive Arlington Center	Arrive Arlington Heights
4:48A	4:54A	5:01A	5:12A	5:11A	5:19A	5:24A	5:29A
5:00	5:06	5:13	5:24	5:21	5:29	5:34	5:39
5:12	5:18	5:25	5:36	5:32	5:40	5:45	5:50
5:23	5:29	5:36	5:47	5:43	5:51	5:56	6:01
5:34	5:40	5:47	5:58	5:54	6:02	6:08	6:13
Every 10 Mins. or Less				6:05	6:15	6:21	6:26
10:15	10:23	10:34	10:51	6:18	6:28	6:34	6:39
10:25	10:33	10:44	11:01	6:31	6:41	6:47	6:52
10:34	10:42	10:53	11:10	6:42	6:52	6:58	7:08
10:43	10:51	11:02	11:19	6:51	7:02	7:12	7:23
10:52	11:00	11:11	11:28	7:00	7:12	7:22	7:33
11:01	11:09	11:20	11:37	7:09	7:21	7:31	7:42
11:11	11:19	11:30	11:47	Every 10 Mins. or Less			
11:20	11:28	11:39	11:56	11:19	11:30	11:38	11:47
11:29	11:37	11:48	12:06P	11:28	11:39	11:47	11:56
11:38	11:46	11:57	12:15	11:37	11:48	11:56	12:06P
11:47	11:56	12:07P	12:25	11:46	11:57	12:05P	12:15
11:56	12:05P	12:16	12:34	11:55	12:08P	12:17	12:27
12:05P				12:05P			
12:14	12:23	12:34	12:52	Every 10 Mins. or Less			
Every 11 Mins. or Less				4:14	4:30	4:46	4:58
4:01	4:10	4:22	4:38	4:24	4:43	4:59	5:11
4:11	4:20	4:32	4:49	4:34	4:53	5:09	5:21
4:21	4:30	4:42	5:01	4:44	5:03	5:19	5:31
4:31	4:40	4:53	5:12	4:54	5:13	5:29	5:41
4:41	4:50	5:04	5:23	5:04	5:23	5:39	5:51
4:51	5:00	5:14	5:33	5:14	5:33	5:49	6:01
5:01	5:10	5:24	5:43	5:24	5:43	5:59	6:11
5:11	5:20	5:34	5:53	5:34	5:53	6:09	6:21
5:21	5:30	5:44	6:03	5:44	6:03	6:19	6:30
5:31	5:40	5:54	6:13	5:54	6:13	6:29	6:36
5:41	5:50	6:04	6:23	6:04	6:23	6:37	6:44
5:50	5:59	6:13	6:32	6:14	6:31	6:42	6:49
6:00	6:08	6:23	6:42	6:23	6:36	6:47	6:54
6:10	6:19	6:33	6:52	6:32	6:44	6:55	7:02
Every 10 Minutes Until				6:41	6:53	7:04	7:11
8:50	8:56	9:05	9:20	6:50	7:02	7:13	7:20
9:00	9:06	9:15	9:30	7:09	7:11	7:22	7:29
9:10	9:16	9:25	9:40	7:08	7:20	7:31	7:38
9:21	9:27	9:36	9:51	7:17	7:29	7:40	7:47
9:32	9:38	9:47	10:02	7:26	7:38	7:49	7:56
9:43	9:49	9:58	10:13	7:35	7:47	7:58	8:05
9:54	10:00	10:09	10:24	Every 11 Mins. or Less			
10:05	10:11	10:20	10:34	10:38	10:49	10:56	11:03
10:16	10:22	10:30	10:43	10:50	11:01	11:08	11:15
10:27	10:33	10:40	10:53	11:02	11:13	11:18	11:23
10:38	10:43	10:50	11:03	11:13	11:23	11:28	11:33
10:50	10:55	11:02	11:15	11:24	11:34	11:39	11:44
11:02	11:07	11:14	11:27	11:35	11:45	11:50	11:55
11:14	11:19	11:26	11:39	11:46	11:56	12:01A	12:06A
11:26	11:31	11:38	11:51	11:57	12:07A	12:12	12:17
11:38	11:43	11:50	12:03A	12:08A	12:18	12:23	12:28
11:50	11:55	12:02A	12:15	12:19	12:29	12:34	12:39
12:02A	12:07A	12:14	12:27	12:30	12:40	12:45	12:50
12:17	12:22	12:29	12:42	12:45	12:55	1:00	1:05
12:32	12:37	12:44	12:57	w 1:05	1:15	1:20	1:25

77 Saturday

Inbound				Outbound			
Leave Arlington Heights	Arrive Arlington Center	Lv/Arrive North Camb.	Arrive Harvard Square	Leave Harvard Station	Arrive North Camb.	Arrive Arlington Center	Arrive Arlington Heights
4:48A	4:52A	4:59A	5:09A	5:18A	5:27A	5:32A	5:38A
5:03	5:07	5:14	5:24	5:33	5:42	5:47	5:53
5:18	5:22	5:29	5:39	5:48	5:57	6:02	6:08
5:33	5:37	5:44	5:54	6:03	6:12	6:17	6:23
5:48	5:52	5:59	6:10	Every 15 Minutes Until			
6:03	6:09	6:16	6:27	7:33	7:43	7:50	7:58
6:18	6:24	6:31	6:42	7:48	7:58	8:05	8:13
Every 14 Mins. Until				8:01	8:11	8:18	8:26
7:15	7:22	7:31	7:45	8:14	8:24	8:31	8:39
7:31	7:38	7:47	8:01	8:28	8:38	8:45	8:53
7:47	7:54	8:03	8:17	Every 14 Mins. Until			
8:02	8:09	8:18	8:32	9:37	9:48	9:56	10:04
8:17	8:24	8:33	8:47	9:50	10:01	10:09	10:17
8:32	8:39	8:48	9:02	10:03	10:14	10:22	10:30
8:45	8:52	9:01	9:15	10:15	10:26	10:34	10:42
8:57	9:04	9:13	9:27	10:26	10:38	10:46	10:54
9:09	9:16	9:25	9:39	10:37	10:49	10:57	11:05
9:21	9:28	9:37	9:51	10:49	11:01	11:09	11:17
9:33	9:40	9:49	10:03	11:00	11:12	11:20	11:28
9:45	9:52	10:01	10:15	11:12	11:24	11:33	11:42
9:56	10:03	10:12	10:26	11:24	11:36	11:45	11:54
10:07	10:14	10:23	10:38	11:35	11:47	11:56	12:05P
10:18	10:25	10:35	10:52	11:47	11:59	12:08P	12:17
10:29	10:37	10:48	11:05	11:58	12:10P	12:19	12:28
10:40	10:48	10:59	11:16	12:09P			
10:51	10:59	11:10	11:27	Every 12 Mins. or Less			
11:02	11:10	11:21	11:38	6:55	7:07	7:15	7:23
Every 11 Mins. Until				7:07	7:19	7:27	7:35
11:56	12:04P	12:15P	12:32P	7:19	7:31	7:39	7:47
12:06P				7:31	7:43	7:51	7:59
Every 12 Mins. or Less				7:44	7:56	8:04	8:12
6:34	6:41	6:51	7:09	7:57	8:09	8:17	8:25
6:47	6:54	7:04	7:21	8:10	8:22	8:30	8:37
7:00	7:06	7:16	7:33	8:25	8:36	8:43	8:50
7:15	7:21	7:31	7:48	8:40	8:51	8:58	9:05
7:30	7:36	7:46	8:03	8:55	9:06	9:13	9:20
7:45	7:51	8:01	8:17	9:10	9:21	9:28	9:35
8:00	8:05	8:14	8:30	9:25	9:36	9:43	9:50
8:15	8:20	8:29	8:45	9:40	9:51	9:58	10:05
8:30	8:35	8:44	9:00	9:55	10:06	10:13	10:20
8:45	8:50	8:59	9:15	10:10	10:21	10:28	10:35
9:00	9:05	9:14	9:30	10:26	10:37	10:44	10:51
9:15	9:20	9:29	9:45	10:42	10:53	11:00	11:07
9:31	9:36	9:45	10:01	10:58	11:09	11:16	11:23
9:48	9:53	10:02	10:18	11:14	11:25	11:32	11:38
10:05	10:10	10:19	10:35	11:30	11:40	11:47	11:53
10:22	10:27	10:35	10:51	11:46	11:56	12:03A	12:09A
10:39	10:44	10:52	11:08	12:02A	12:12A	12:19	12:25
Every 17 Mins. or Less				12:18	12:28	12:35	12:41
12:00M	12:04A	12:11A	12:25A	12:35	12:45	12:52	12:58
12:15	12:19	12:26	12:40	12:50	1:00	1:05	1:11
12:30	12:34	12:41	12:55	w 1:05	1:15	1:20	1:26

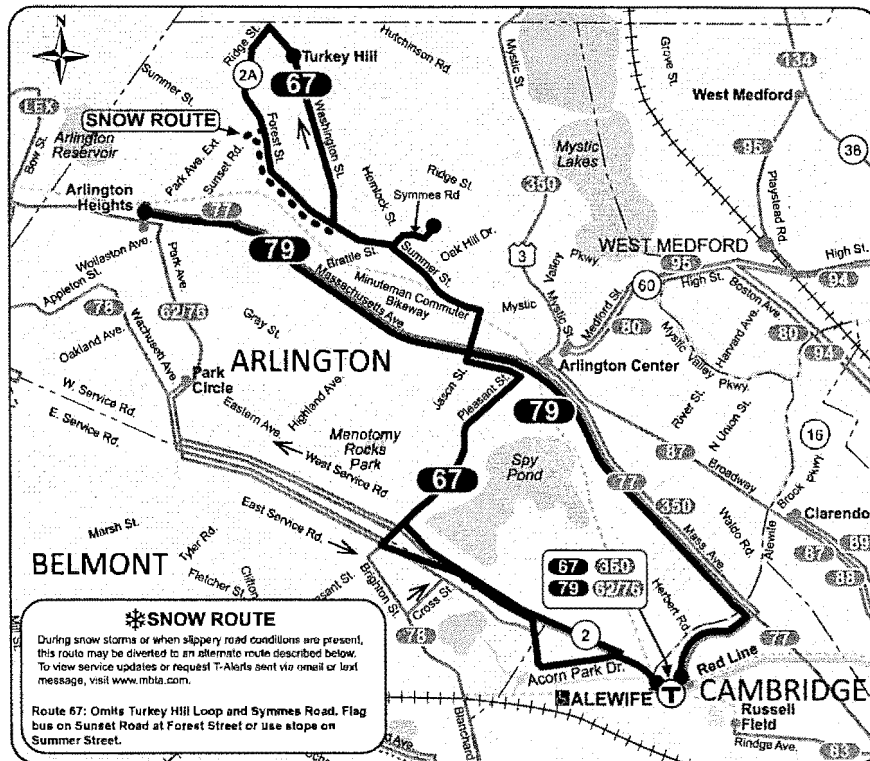
w - Waits for last train to arrive at Harvard Station.

All buses are accessible to persons with disabilities

77 Sunday

Inbound			Outbound		
Leave Arlington Heights	Arrive Arlington Center	Arrive Harvard Square	Leave Harvard Station	Arrive Arlington Center	Arrive Arlington Heights
6:00A	6:04A	6:22A	6:25A	6:39A	6:45A
6:20	6:24	6:42	6:44	6:58	7:04
6:40	6:44	7:03	7:04	7:18	7:24
7:00	7:04	7:23	7:24	7:38	7:44
7:20	7:24	7:43	7:44	7:58	8:05
7:40	7:44	8:03	8:04	8:23	8:30
7:55	7:59	8:20	8:24	8:43	8:50
8:10	8:14	8:38	8:44	9:03	9:11
8:25	8:29	8:54	9:04	9:24	9:32
8:40	8:45	9:10	9:24	9:44	9:52
8:57	9:02	9:27	9:44	10:04	10:12
9:14	9:19	9:44	10:04	10:24	10:32
9:30	9:35	10:00	Every 11:46	15 Mins. 12:08P	or Less 12:17P
11:49	11:55	12:25P	12:01P	12:32P	
12:05P	12:11P	12:41	Every 7:08	15 Mins. 7:28	or Less 7:36
6:20	6:25	6:49	7:21	7:41	7:49
6:34	6:38	7:02	7:36	7:56	8:04
6:47	6:51	7:15	7:51	8:11	8:19
7:01	7:05	7:29	8:07	8:27	8:35
7:16	7:20	7:44	8:23	8:43	8:51
7:32	7:36	8:00	8:38	8:58	9:06
7:48	7:52	8:16	8:54	9:14	9:22
8:05	8:09	8:32	9:10	9:30	9:37
8:22	8:26	8:50	9:25	9:42	9:49
8:39	8:43	9:06	9:40	9:57	10:04
8:55	8:59	9:22	9:54	10:11	10:18
9:12	9:16	9:39	10:09	10:26	10:33
9:28	9:32	9:55	10:22	10:39	10:46
9:44	9:48	10:11	10:36	10:53	11:00
10:00	10:04	10:27	10:49	11:06	11:13
10:15	10:19	10:41	11:02	11:19	11:26
10:32	10:35	10:55	11:15	11:32	11:37
10:48	10:51	11:11	11:30	11:45	11:50
11:04	11:07	11:27	11:45	12:00M	12:05A
11:17	11:20	11:40	12:00M	12:15	12:20
11:35	11:38	11:58	12:10A	12:25	12:30
11:55	11:58	12:18A	12:25	12:40	12:45
12:15A	12:18A	12:38	12:45	1:00	1:05
12:35	12:38	12:58	w 1:05	1:20	1:25

Route 67 Turkey Hill - Alewife Station
Route 79 Arlington Heights - Alewife Station



Schedule Change

67•79

Effective August 30, 2020

67 Turkey Hill-Alewife Station
79 Arlington Heights-Alewife Station

Serving

- Arlington High School
- Arlington Town Hall
- Arlington Center
- Red Line



MassDOT
 Massachusetts Department of Transportation

Information 617-222-3300 • 1-800-388-6200
 (TTY) 617-222-3306 • www.mbta.com

67 Weekday					
Inbound			Outbound		
Leave Turkey Hill	Arrive Arlington Center	Arrive Alewife Station	Leave Alewife Station	Arrive Arlington Center	Arrive Turkey Hill
6:18A	6:23A	6:32A	5:53A	6:00A	6:15A
6:52	6:57	7:07	6:26	6:33	6:48
7:22	7:29	7:43	6:59	7:06	7:21
7:49	7:56	8:10	7:24	7:31	7:47
8:17	8:24	8:39	7:53	8:00	8:16
8:45	8:50	9:03	8:23	8:30	8:44
9:12	9:17	9:27	8:49	8:56	9:10
10:02	10:07	10:17	9:39	9:46	10:00
10:52	10:57	11:07	10:29	10:36	10:50
11:42	11:47	11:56	11:19	11:26	11:40
12:32P	12:37P	12:46P	12:09P	12:16P	12:30P
1:22	1:27	1:36	12:59	1:06	1:20
2:12	2:17	2:26	1:48	1:55	2:10
3:02	3:07	3:16	2:38	2:47	3:02
3:52	3:57	4:06	3:27	3:36	3:51
4:42	4:47	4:56	4:17	4:26	4:41
5:10	5:16	5:26	4:44	4:55	5:10
5:37	5:43	5:53	5:11	5:22	5:37
6:05	6:11	6:21	5:38	5:49	6:04
6:32	6:36	6:45	6:05	6:16	6:31
6:57	7:01	7:10	6:33	6:41	6:56
7:37	7:41	7:49	7:15	7:23	7:37
8:20	8:24	8:32	7:58	8:05	8:18

Service Note: Route 67
Serves Symmes Road OUTBOUND ONLY.


Route 67
Turkey Hill-Alewife Station





79 Weekday					
Inbound			Outbound		
Leave Arlington Heights	Arrive Arlington Center	Arrive Alewife Station	Leave Alewife Station	Arrive Arlington Center	Arrive Arlington Heights
6:35A	6:41A	6:55A	7:02A	7:09A	7:19A
7:00	7:06	7:20	7:30	7:38	7:52
7:30	7:39	7:59	8:10	8:16	8:26
8:00	8:06	8:24	8:35	8:41	8:51
8:30	8:36	8:54	9:30	9:36	9:46
9:00	9:05	9:20			
9:50	9:55	10:06			
2:20P	2:26P	2:39P	2:00P	2:06P	2:16P
s 3:05	3:11	3:25	2:45	2:52	3:05
s 3:15	3:21	3:34	3:10	3:17	3:28
3:20	3:26	3:39	3:30	3:37	3:48
s 3:25	3:30	3:41	3:50	3:57	4:09
3:40	3:46	3:59	4:10	4:22	4:34
4:00	4:06	4:19	4:30	4:42	4:54
4:20	4:26	4:39	4:50	5:02	5:14
4:40	4:46	4:59	5:10	5:24	5:36
5:00	5:06	5:20	5:30	5:44	5:56
5:20	5:26	5:40	5:50	6:03	6:14
5:45	5:51	6:05	6:15	6:27	6:38
6:05	6:11	6:25	6:35	6:47	6:58
6:45	6:51	7:02	7:05	7:13	7:24

s - Leaves from Massachusetts Avenue at Appleton Street and does NOT run during school vacation

Route 79
Arlington Heights-Alewife Station

No service on weekends.

 All buses are accessible to persons with disabilities

Fare	   			
	Local Bus	Bus + Bus	Rapid Transit	Bus + Rapid Transit
CharlieCard	\$1.70	\$1.70	\$2.40	\$2.40
CharlieTicket	\$2.00	\$2.00	\$2.90	\$4.90
Cash-on-Board	\$2.00	\$4.00	\$2.90	\$4.90
Student/Youth*	\$0.85	\$0.85	\$1.10	\$1.10
Senior/TAP**	\$0.85	\$0.85	\$1.10	\$1.10

VALID PASSES: LinkPass (\$90.00/mo.); Local Bus (\$55/mo.); *Student/Youth LinkPass (\$30.00/mo.); **Senior/TAP LinkPass (\$30/mo.); and express bus, commuter rail, and boat passes.

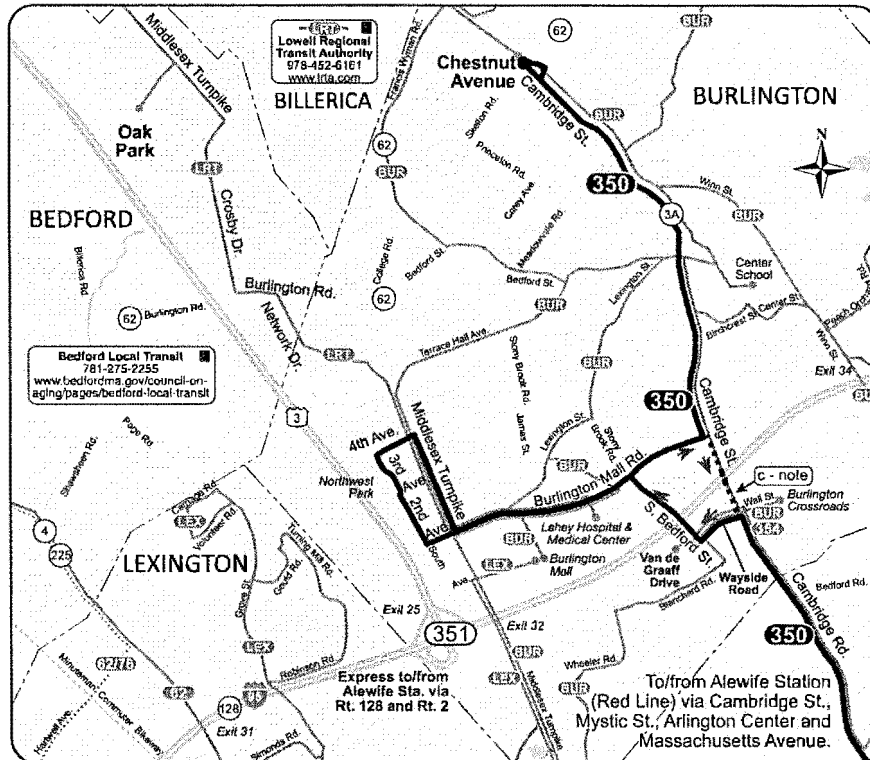
FREE FARES: Children 11 and under ride free when accompanied by an adult; Blind Access CharlieCard holders ride free and if using a guide, the guide rides free.

* Requires Student CharlieCard or Youth CharlieCard. Student CharlieCards are available to students through participating middle schools and high schools. Youth CharlieCards are available through community partners in the Boston metro area. Visit www.mbta.com/youthpass for details.

** Requires Senior/TAP CharlieCard, available to Medicare cardholders, seniors 65+, and persons with disabilities.

Fall 2020 & Winter 2021 Holidays
9/7/20; Sunday, 10/12/20 & 11/11/20: Weekday
11/26/20, 12/25/20, & 1/1/21: Sun; 1/18/21 & 2/15/21: Sat

Route 350 North Burlington - Alewife Station
Route 351 Bedford Woods Dr - Alewife Station



Service/Schedule Change

350•351

Effective August 30, 2020

350 North Burlington-Alewife Station
351 Bedford Woods Dr - Alewife Station

Serving

- Burlington Mall
- Oak Park
- Northwest Park
- Red Line
- Lehigh Hospital & Medical Center
- Four Corners
- Arlington Center

Massachusetts Department of Transportation
MassDOT

Information 617-222-3300 • 1-800-392-4000
(TTY) 617-222-5506 • www.mass.gov

350 & 351

Weekday

Inbound					Outbound				
Leave Chestnut & Cambridge	Arrive Burlington Mail Road	Arrive Woburn/ Burl. Line	Arrive Arlington Center	Arrive Alewife Station	Leave Alewife Station	Arrive Arlington Center	Arrive Woburn/ Burl. Line	Arrive Burlington Mail Road	Arrive Chestnut & Cambridge
6:00A	.....	6:05A	6:19A	6:31A	b 6:53	6:00	.....	.....	.....
6:20	.....	6:25	6:42	6:52	b 6:16	6:22	6:39	6:50	7:08
6:38	.....	6:45	7:04	7:24	b 6:36	6:42	6:59	7:09	7:25
6:53	.....	7:00	7:19	7:41	b 6:56	7:02	7:17	7:27	7:43
7:15	.....	7:22	7:41	8:03	7:16	7:22	7:37	7:47	8:03
7:35	.....	7:44	8:03	8:25	7:36	7:43	8:02	8:11	8:31
7:55	.....	8:04	8:23	8:45	7:56	8:03	8:22	8:31	8:51
8:20	8:35A	8:42	9:03	9:13	8:16	8:23	8:42	8:51	9:11
8:40	8:55	9:02	9:19	9:29	8:56	9:03	9:22	9:31	9:49
9:00	9:14	9:21	9:38	9:48	9:36	9:42	9:59	10:08	10:26
9:20	9:34	9:41	9:58	10:09	10:16	10:22	10:39	10:48	11:06
10:00	10:14	10:21	10:38	10:49	10:56	11:02	11:19	11:28	11:46
10:40	10:54	11:01	11:18	11:29	11:36	11:42	11:59	12:08P	12:26P
11:20	11:34	11:41	11:58	12:09P	12:16P	12:22P	12:39P	12:48	1:06
12:00N	12:14P	12:21P	12:38P	12:49	12:56	1:02	1:19	1:28	1:46
12:40	12:54	1:02	1:19	1:30	1:36	1:42	1:59	2:07	2:24
1:20	1:34	1:42	1:59	2:10	2:16	2:26	2:45	2:53	3:12
2:00	2:14	2:22	2:39	2:50	2:41	2:51	3:09	3:18	3:37
2:40	2:54	3:03	3:21	3:32	3:05	3:13	3:31	3:40	3:59
3:25	3:40	3:50	4:08	4:19	3:30	3:38	3:56	4:05	4:27
3:45	4:00	4:10	4:28	4:39	3:55	4:03	4:22	4:31	4:53
4:10	4:25	4:35	4:53	5:07	4:25	4:35	4:54	5:03	5:25
4:30	4:45	4:55	5:16	5:32	4:55	5:08	5:28	.....	5:43
4:45	5:00	5:10	5:32	5:48	5:20	5:33	5:53	.....	6:08
5:10	5:25	5:35	5:57	6:10	5:40	5:53	6:13	.....	6:28
5:35	5:50	6:00	6:21	6:34	6:00	6:13	6:33	.....	6:48
5:55	6:10	6:18	6:37	6:50	6:20	6:33	6:53	.....	7:08
6:15	6:30	6:37	6:52	7:05	6:42	6:51	7:06	7:15	7:37
6:35	6:49	6:56	7:11	7:24	7:05	7:14	7:29	7:38	8:00
6:55	7:09	7:16	7:31	7:41	7:35	7:44	7:59	8:07	8:23
7:45	7:59	8:05	8:18	8:28	8:31	8:39	8:54	9:02	9:17
8:35	8:49	8:55	9:08	9:18	9:25	9:33	9:48	9:56	10:11
9:30	9:44	9:50	10:03	10:13	10:20	10:32	10:50	.....	11:05
10:25	10:39	10:45	10:58	11:08					

Route 351 indicated by shaded areas

ROUTE 351 FARES

Fare	Local Bus	Inner Express	Outer Express	Senior
CharlieCard	\$1.70	\$4.25	\$4.25	\$4.25
CharlieTicket	\$2.00	\$5.25	\$7.25	\$8.15
Cash-on-Board	\$2.00	\$4.00	\$2.90	\$4.90
Student/Youth*	\$0.85	\$2.10	\$2.10	\$2.10
Senior/TAP**	\$0.85	\$2.10	\$2.10	\$2.10

VALID PASSES on 442/442: LinkPass (\$90.00/mo.); Local Bus (\$55/mo.); *Student/Youth LinkPass (\$30.00/mo.); **Senior/TAP LinkPass (\$30.00/mo.); and express bus, commuter rail, and boat passes.

FREE PASSES: Children 11 and under ride free when accompanied by an adult. Blind Access CharlieCard holders ride free and if using a guide, the guide rides free.

* Requires Student CharlieCard or Youth CharlieCard. Student CharlieCards are available to students through participating middle schools and high schools. Youth CharlieCards are available through community partners in the Boston metro area. Visit www.mbta.com/youthpass for details.

** Requires Senior/TAP CharlieCard, available to Medicare cardholders, seniors 65+, and persons with disabilities.

350 Saturday

Inbound			Outbound		
Leave Chestnut & Cambridge	Arrive Burlington Mail Road	Arrive Alewife Station	Leave Alewife Station	Arrive Burlington Mail Road	Arrive Chestnut & Cambridge
7:10A	.....	7:38A	6:25A	6:51A	7:05A
7:50	.....	8:18	7:05	7:31	7:45
8:30	8:45A	9:14	7:45	8:11	8:25
9:30	9:45	10:17	8:30	8:59	9:18
10:30	10:46	11:19	9:30	10:01	10:22
11:30	11:46	12:21P	10:30	11:01	11:22
			11:30	12:01P	12:21P
12:30P	12:46P	1:25			
1:30	1:46	2:25	12:30P	1:02	1:22
2:30	2:46	3:21	1:30	2:02	2:22
3:30	3:46	4:21	2:30	3:02	3:22
4:30	4:46	5:20	3:30	4:01	4:19
5:30	5:46	6:17	4:30	4:58	5:16
6:25	6:41	7:10	5:30	5:55	6:13
7:20	7:35	8:04	6:25	6:50	7:08
8:10	8:25	8:54	7:15	7:40	7:58
9:00	9:15	9:44	8:10	8:33	8:52
9:50	10:05	10:34	9:00	9:23	9:42
			9:50	.....	10:20
			10:40	.....	11:10

NOTE:
Route 351 Alewife service
operates via Berth 8

Route 351 may be
limited or
suspended. Visit
mbta.com for latest
updates.

350 Sunday

Inbound			Outbound		
Leave Chestnut & Cambridge	Arrive Burlington Mail Road	Arrive Alewife Station	Leave Alewife Station	Arrive Burlington Mail Road	Arrive Chestnut & Cambridge
7:55A	.....	8:24A	7:05A	7:31A	7:49A
9:20	.....	9:52	8:30	8:57	9:16
10:50	.....	11:22	9:55	10:24	10:43
			11:25	11:54	12:13P
12:20P	12:34P	1:06P			
1:15	1:29	2:00	12:20P	12:49P	1:08
2:10	2:24	2:56	1:15	1:45	2:04
3:05	3:19	3:53	2:10	2:38	2:57
4:00	4:14	4:50	3:05	3:33	3:52
4:55	5:09	5:42	4:00	4:28	4:47
5:50	6:04	6:37	4:55	5:23	5:42
6:50	7:04	7:35	5:50	6:18	6:37
			6:50	.....	7:26

All buses are accessible to
persons with disabilities

b - Omits Northwest Park

Route 350
North Burlington-
Alewife Station

Route 351
Bedford Woods Dr -
Alewife Station

Fall 2020 & Winter 2021 Holidays
9/7/20, Sunday; 10/12/20 & 11/11/20: Weekday
11/26/20, 12/25/20, & 1/1/21: Sun; 1/18/21 & 2/15/21: Sat

□ Trip Generation

Institute of Transportation Engineers (ITE) 10th Edition
Land Use Code (LUC) 820 - Shopping Center

Average Vehicle Trips Ends vs: 1,000 Sq. Feet Gross Leasable Area
 Independent Variable (X): 1.735

AVERAGE WEEKDAY DAILY

$T = 37.75 * (X)$
 $T = 37.75 * 1.74$
 $T = 65.50$
 $T = 66$ vehicle trips
 with 50% (33 vpd) entering and 50% (33 vpd) exiting.

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

$T = 0.94 * (X)$
 $T = 0.94 * 1.74$
 $T = 1.63$
 $T = 2$ vehicle trips
 with 62% (1 vph) entering and 38% (1 vph) exiting.

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

$T = 3.81 * (X)$
 $T = 3.81 * 1.74$
 $T = 6.61$
 $T = 7$ vehicle trips
 with 48% (3 vph) entering and 52% (4 vph) exiting.

SATURDAY DAILY

$T = 46.12 * (X)$
 $T = 46.12 * 1.74$
 $T = 80.02$
 $T = 80$ vehicle trips
 with 50% (40 vpd) entering and 50% (40 vpd) exiting.

SATURDAY MIDDAY PEAK HOUR OF GENERATOR

$T = 4.50 * (X)$
 $T = 4.50 * 1.74$
 $T = 7.81$
 $T = 8$ vehicle trips
 with 52% (4 vph) entering and 48% (4 vph) exiting.

Summary

Pass-By:	0.34 Weekday		
Pass-By:	0.26 Saturday		
	<u>Total</u>	<u>Pass-By</u>	<u>Net New</u>
AM			
In	1	0	1
Out	<u>1</u>	<u>0</u>	<u>1</u>
Total	2	0	2
PM			
In	3	1	2
Out	<u>4</u>	<u>1</u>	<u>3</u>
Total	7	2	5
Sat			
In	4	1	3
Out	<u>4</u>	<u>1</u>	<u>3</u>
Total	8	2	6
Daily			
In	33	11	22
Out	<u>33</u>	<u>11</u>	<u>22</u>
Total	66	22	44
Sat Daily			
In	40	10	30
Out	<u>40</u>	<u>10</u>	<u>30</u>
Total	80	20	60

Institute of Transportation Engineers (ITE) 10th Edition Land Use Code (LUC) 221 - Multifamily Housing (Mid-Rise)
--

Average Vehicle Trips Ends vs: Dwelling Units
Independent Variable (X): 37

AVERAGE WEEKDAY DAILY

$T = 5.44 * X$
 $T = 5.44 * 37$
 $T = 201.28$
 $T = 202$ vehicle trips
with 50% (101 vpd) entering and 50% (101 vpd) exiting.

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

$T = 0.36 * X$
 $T = 0.36 * 37$
 $T = 13.32$
 $T = 13$ vehicle trips
with 26% (3 vph) entering and 74% (10 vph) exiting.

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

$T = 0.44 * X$
 $T = 0.44 * 37$
 $T = 16.28$
 $T = 16$ vehicle trips
with 61% (10 vph) entering and 39% (6 vph) exiting.

SATURDAY DAILY

$T = 4.91 * X$
 $T = 4.91 * 37$
 $T = 181.67$
 $T = 182$ vehicle trips
with 50% (91 vpd) entering and 50% (91 vpd) exiting.

SATURDAY MIDDAY PEAK HOUR OF GENERATOR

$T = 0.44 * X$
 $T = 0.44 * 37$
 $T = 16.28$
 $T = 16$ vehicle trips
with 49% (8 vph) entering and 51% (8 vph) exiting.

Institute of Transportation Engineers (ITE) 10th Edition
Land Use Code (LUC) 820 - Shopping Center

Average Vehicle Trips Ends vs: 1,000 Sq. Feet Gross Leasable Area
 Independent Variable (X): 10.500

AVERAGE WEEKDAY DAILY

$T = 37.75 * (X)$
 $T = 37.75 * 10.50$
 $T = 396.38$
 $T = 396$ vehicle trips
 with 50% (198 vpd) entering and 50% (198 vpd) exiting.

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

$T = 0.94 * (X)$
 $T = 0.94 * 10.50$
 $T = 9.87$
 $T = 10$ vehicle trips
 with 62% (6 vph) entering and 38% (4 vph) exiting.

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

$T = 3.81 * (X)$
 $T = 3.81 * 10.50$
 $T = 40.01$
 $T = 40$ vehicle trips
 with 48% (19 vph) entering and 52% (21 vph) exiting.

SATURDAY DAILY

$T = 46.12 * (X)$
 $T = 46.12 * 10.50$
 $T = 484.26$
 $T = 484$ vehicle trips
 with 50% (242 vpd) entering and 50% (242 vpd) exiting.

SATURDAY MIDDAY PEAK HOUR OF GENERATOR

$T = 4.50 * (X)$
 $T = 4.50 * 10.50$
 $T = 47.25$
 $T = 47$ vehicle trips
 with 52% (24 vph) entering and 48% (23 vph) exiting.

Summary

Pass-By:	0.34 Weekday		
Pass-By:	0.26 Saturday		
	<u>Total</u>	<u>Pass-By</u>	<u>Net New</u>
AM			
In	6	2	4
Out	<u>4</u>	<u>2</u>	<u>2</u>
Total	10	4	6
PM			
In	19	7	12
Out	<u>21</u>	<u>7</u>	<u>14</u>
Total	40	14	26
Sat			
In	24	6	18
Out	<u>23</u>	<u>6</u>	<u>17</u>
Total	47	12	35
Daily			
In	198	67	131
Out	<u>198</u>	<u>67</u>	<u>131</u>
Total	396	134	262
Sat Daily			
In	242	63	179
Out	<u>242</u>	<u>63</u>	<u>179</u>
Total	484	126	358

□ Census Information

MEANS OF TRANSPORTATION TO WORK BY VEHICLES AVAILABLE

Note: This is a modified view of the original table produced by the U.S. Census Bureau. This download or printed version may have missing information from the original table.

Census Tract 3561, Middlesex County, Massachusetts		
Label	Estimate	Margin of Error
▼ Total:	2,051	±155
No vehicle available	153	±92
1 vehicle available	947	±183
2 vehicles available	760	±179
3 or more vehicles available	191	±130
▼ Car, truck, or van - drove alone:	880	±171
No vehicle available	0	±12
1 vehicle available	268	±84
2 vehicles available	478	±145
3 or more vehicles available	134	±88
▼ Car, truck, or van - carpooled:	237	±96
No vehicle available	30	±49
1 vehicle available	110	±57
2 vehicles available	53	±59
3 or more vehicles available	44	±50
▼ Public transportation (excluding taxicab):	649	±144
No vehicle available	89	±66
1 vehicle available	385	±130
2 vehicles available	175	±83
3 or more vehicles available	0	±12
▼ Walked:	0	±12
No vehicle available	0	±12
1 vehicle available	0	±12
2 vehicles available	0	±12
3 or more vehicles available	0	±12
▼ Taxicab, motorcycle, bicycle, or other means:	152	±65
No vehicle available	26	±31

MEANS OF TRANSPORTATION TO WORK BY VEHICLES AVAILABLE

Survey/Program:
American Community Survey
Universe:
Workers 16 years and over in households
Year:
2018
Estimates:
5-Year
Table ID:
B08141

Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities, and towns and estimates of housing units for states and counties.

Source: U.S. Census Bureau, 2014-2018 American Community Survey 5-Year Estimates

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see ACS Technical Documentation). The effect of nonsampling error is not represented in these tables.

Workers include members of the Armed Forces and civilians who were at work last week.

While the 2014-2018 American Community Survey (ACS) data generally reflect the February 2013 Office of Management and Budget (OMB) definitions of metropolitan and micropolitan statistical areas; in certain instances the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB definitions due to differences in the effective dates of the geographic entities.

Estimates of urban and rural populations, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2010 data. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

Explanation of Symbols:

- An "***" entry in the margin of error column indicates that either no sample observations or too few sample observations were available to compute a standard error and thus the margin of error. A statistical test is not appropriate.
- An "-" entry in the estimate column indicates that either no sample observations or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest interval or upper interval of an open-ended distribution, or the margin of error associated with a median was larger than the median itself.
- An "-" following a median estimate means the median falls in the lowest interval of an open-ended distribution.
- An "+" following a median estimate means the median falls in the upper interval of an open-ended distribution.
- An "****" entry in the margin of error column indicates that the median falls in the lowest interval or upper interval of an open-ended distribution. A statistical test is not appropriate.
- An "*****" entry in the margin of error column indicates that the estimate is controlled. A statistical test for sampling variability is not appropriate.

March 10, 2021

Jennifer Raitt
Director of Planning & Community
Development
730 Massachusetts Ave
Arlington, MA 02476

RE: Mixed-Use Redevelopment
Drainage Summary Letter
190 & 192-200 Massachusetts Ave
Arlington, MA 02476

Dear Ms. Raitt,

On behalf of our Client, 192-200 Massachusetts Ave, LLC, Allen & Major Associates (A&M) is pleased to provide this letter in support of the Special Permit application for the Mixed-Use Redevelopment project at 190 & 192-200 Massachusetts Ave. This letter will summarize the changes to the stormwater management system which are proposed as part of the redevelopment efforts.

Existing Conditions

The site is located on the corner of Lake Street and Massachusetts Avenue and Chandler Street and Massachusetts Avenue. There is an existing curb cut to the parcel located off of Chandler Street. The project comprised of two property's, identified on the City tax Map 6, Block 3, Lots 1A and 1B. Both lots are predominantly covered by an existing brick building. Elevations onsite range from elevation 29 to elevation 24. Elevation 24 is the low point on-site located at the existing curb cut along Chandler Street, and elevation 29 runs through the sidewalk along Mass Ave. The majority of the stormwater from the site discharges through roof drain connections to the municipal system. A review of the NRCS soil report for Middlesex County indicates that the soil onsite is considered Merrimac-Urban Land which has a Hydrologic Soil Group rating of an "A". A copy of the Existing Watershed Plan is included herewith.

Proposed Conditions

The project, proposes to demolish a portion of the existing structure to construct a 5-story, 9,764 square foot Mixed-Use building with apartment and retail uses. There are 15 parking stalls proposed on the first level. The stormwater management system will be improved with a new drainage pipe connection. The quantity of stormwater runoff will be reduced with the installation of landscaped areas on-site. The proposed work will result in approximately 701 square feet of impervious material being replaced with landscaped areas.

Runoff flows were estimated for both pre and post development conditions using HydroCAD 10.00 software, at a specific "Study Point" (SP-1). Study Point 1 is the flows that will enter the municipal drainage system. The table below shows that the project causes a reduction in the peak rate of runoff and volume of stormwater leaving the site at the Study Point. Copies of the HydroCAD worksheets and Watershed Plans are included herewith.

STUDY POINT #1 (flow to municipal system)			
	2-Year	10-Year	100-Year
Existing Flow (CFS)	0.83	1.27	2.31
Proposed Flow (CFS)	0.76	1.22	2.28
Decrease (CFS)	0.07	0.05	0.03
Existing Volume (CF)	2,781	4,327	8,025
Proposed Volume (CF)	2,387	3,906	7,578
Decrease (CF)	394	421	447

The surface water drainage requirements of the Town of Arlington Zoning Bylaw Environmental Design Review Standards have been reviewed and met with the proposed design. The proposed project will introduce landscaped areas to the site to reduce the impervious area. The Town of Arlington, Article 15 Stormwater Mitigation, shall not apply as the proposed development will introduce a reduction in impervious area. However, with the proposed landscaped areas the project will reduce the runoff rates for all design storms, and comply with this bylaw.

Summary

As shown in the table above, the proposed development will have a positive impact on the stormwater management system by reducing the rate and volume of stormwater runoff from the site.

Very truly yours,

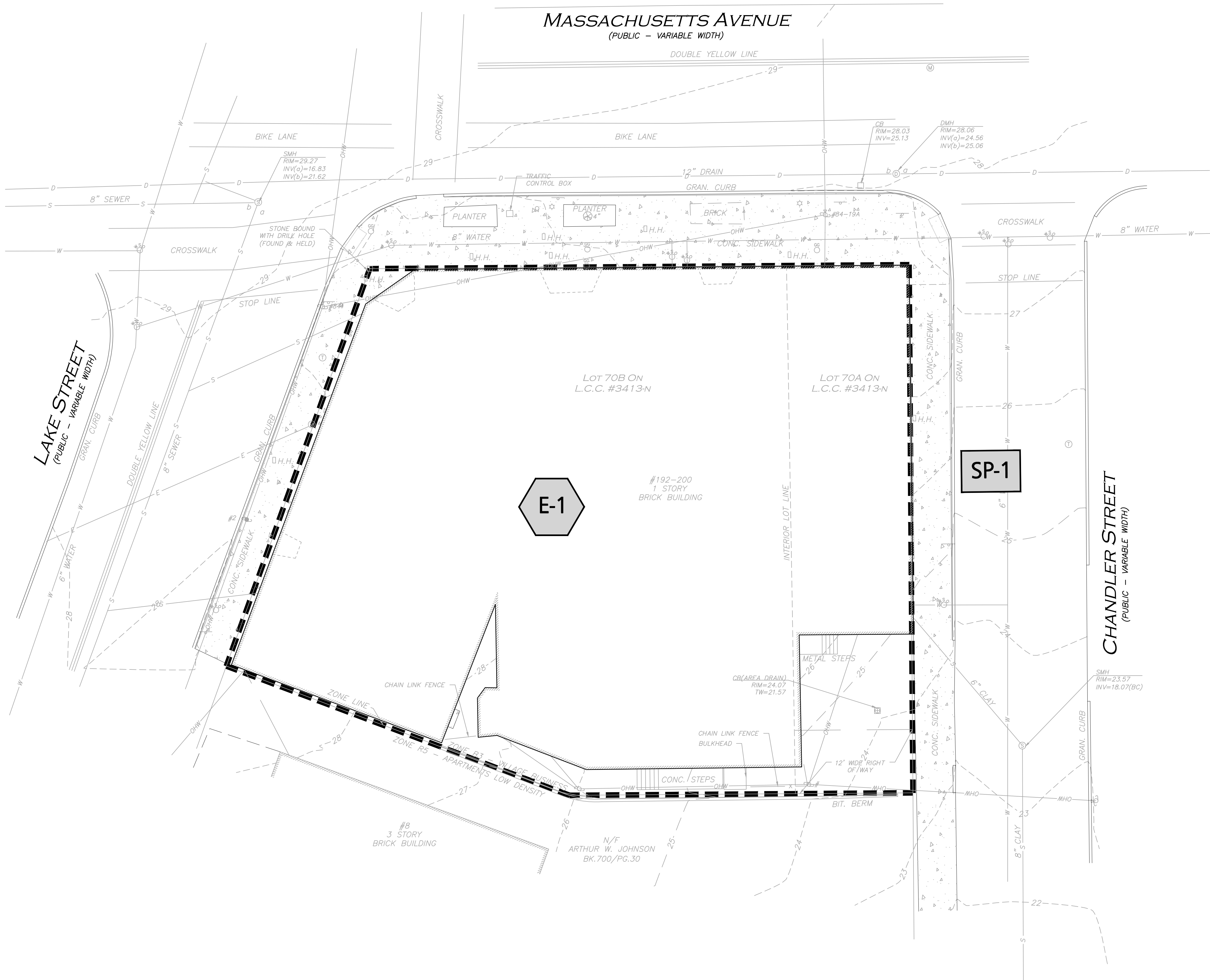
ALLEN & MAJOR ASSOCIATES, INC.

Aaron Mackey, PE
Project Engineer



Attachments:

1. Existing Watershed Plan
2. Proposed Watershed Plan
3. Pre development HydroCAD Calculations
4. Post development HydroCAD Calculations
5. Extreme Precipitation Tables
6. NRCS Soil Report

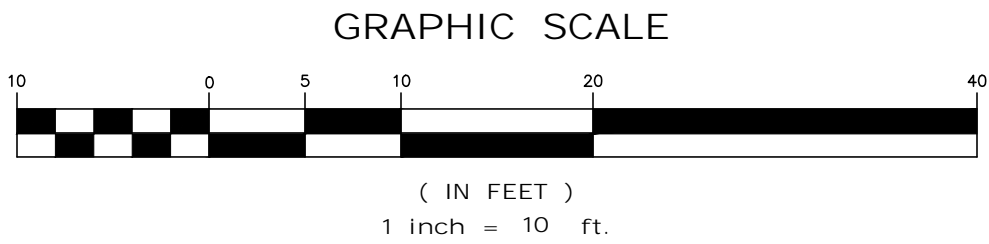


LEGEND

EXISTING WATERSHED ———

SUBCATCHMENT BOUNDARY - - - - -

SUBCATCHMENT LABEL **E-1**



1	03/10/2021	ISSUED FOR ARB REVIEW
REV	DATE	DESCRIPTION

APPLICANT/OWNER:

192-200 MASSACHUSETTS AVE, LLC
455 MASSACHUSETTS AVE, STE 1
ARLINGTON, MA 02474

PROJECT:

190 & 192-200
MASSACHUSETTS AVE
ARLINGTON, MA 02476

PROJECT NO. 2729-02 DATE: 10/23/2020

SCALE: 1" = 10' DWG. NAME: C2729-02

DESIGNED BY: ARM CHECKED BY: BDJ

PREPARED BY:

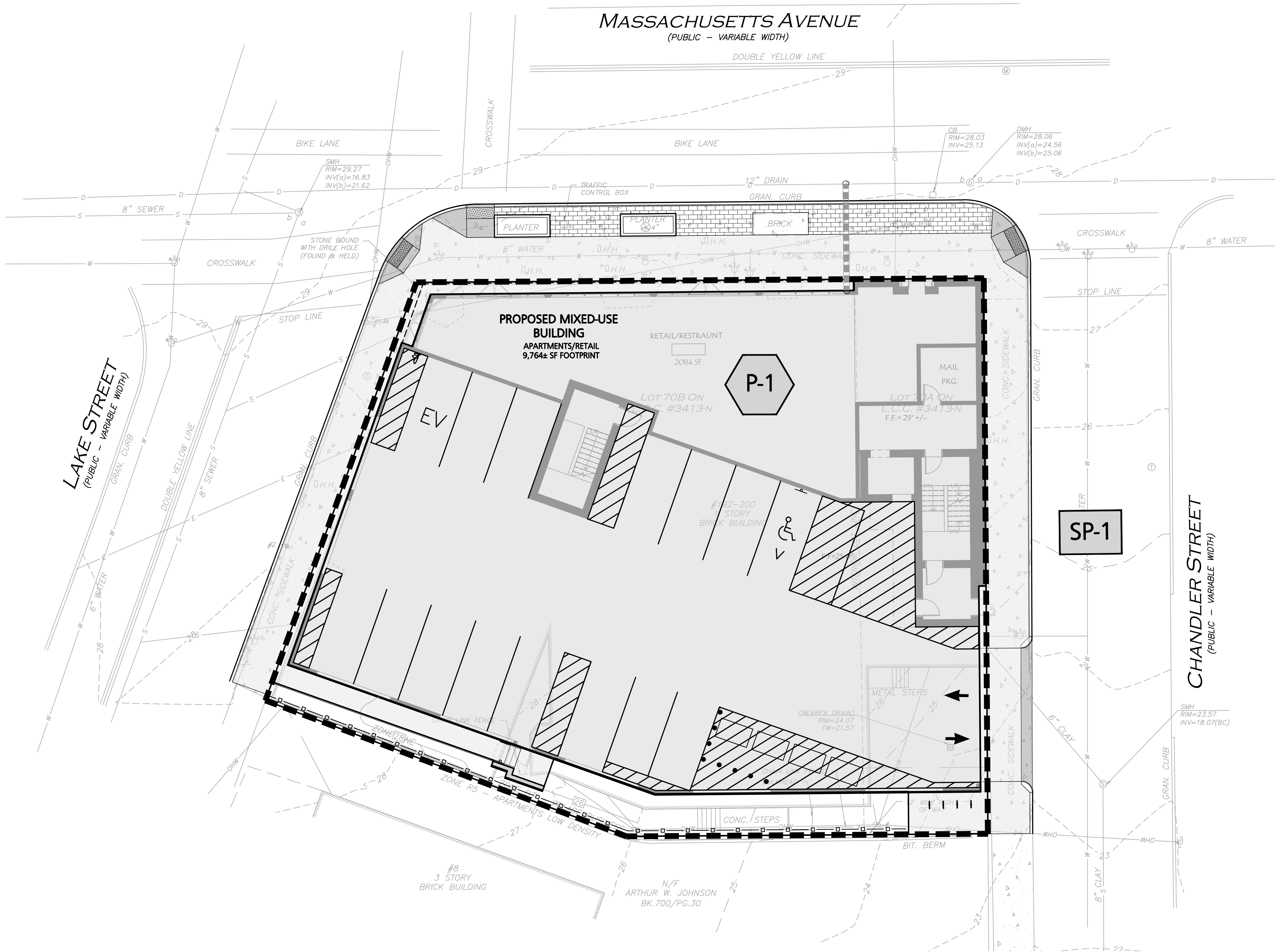
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environmental consulting • landscape architecture
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DRAWING TITLE: EXISTING WATERSHED PLAN SHEET No. EWP



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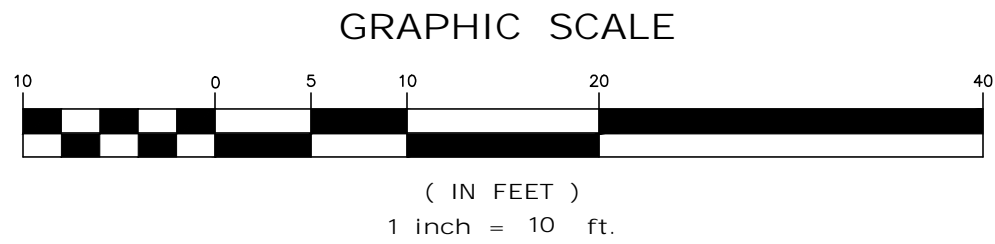
EXISTING WATERSHED

PROPOSED WATERSHED

SUBCATCHMENT LABEL

SUBCATCHMENT BOUNDARY

P-1



1	03/10/2021	ISSUED FOR ARB REVIEW
REV	DATE	DESCRIPTION

APPLICANT/OWNER:

192-200 MASSACHUSETTS AVE, LLC
455 MASSACHUSETTS AVE, STE 1
ARLINGTON, MA 02474

PROJECT:

190 & 192-200
MASSACHUSETTS AVE
ARLINGTON, MA 02476

PROJECT NO.	2729-02	DATE:	10/23/2020
SCALE:	1" = 10'	DWG. NAME:	C2729-02
DESIGNED BY:	ARM	CHECKED BY:	BDJ

PREPARED BY:

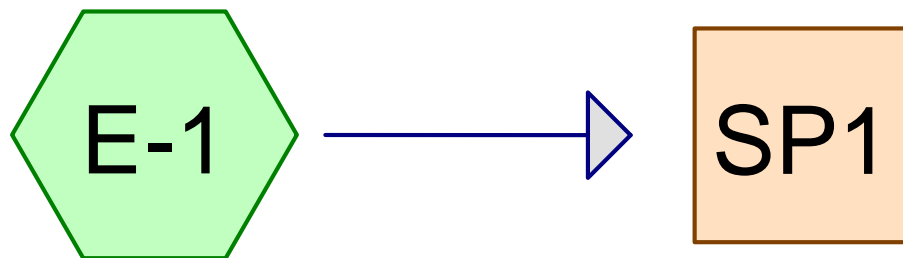
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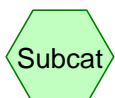
DRAWING TITLE:	SHEET No.
PROPOSED WATERSHED PLAN	PWP

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Subcat E-1

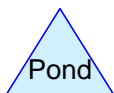
Study Point 1



Subcat



Reach



Pond



Link

2729-02_Existing-Conditions

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Page 2

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
1,238	98	Paved parking, HSG A (E-1)
9,896	98	Roofs, HSG A (E-1)
11,134	98	TOTAL AREA

2729-02_Existing-Conditions

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Page 3

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
11,134	HSG A	E-1
0	HSG B	
0	HSG C	
0	HSG D	
0	Other	
11,134		TOTAL AREA

2729-02_Existing-Conditions

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Page 4

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Subcatchment Numbers
1,238	0	0	0	0	1,238	Paved parking	E-1
9,896	0	0	0	0	9,896	Roofs	E-1
11,134	0	0	0	0	11,134	TOTAL AREA	

2729-02_Existing-Conditions

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Type III 24-hr 2-Year Rainfall=3.23"

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Page 5

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points x 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment E-1: Subcat E-1

Runoff Area=11,134 sf 100.00% Impervious Runoff Depth=3.00"

Tc=5.0 min CN=98 Runoff=0.83 cfs 2,781 cf

Reach SP1: Study Point 1

Inflow=0.83 cfs 2,781 cf

Outflow=0.83 cfs 2,781 cf

Total Runoff Area = 11,134 sf Runoff Volume = 2,781 cf Average Runoff Depth = 3.00"
0.00% Pervious = 0 sf 100.00% Impervious = 11,134 sf

2729-02_Existing-Conditions

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Type III 24-hr 2-Year Rainfall=3.23"

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Page 6

Summary for Subcatchment E-1: Subcat E-1

Runoff = 0.83 cfs @ 12.07 hrs, Volume= 2,781 cf, Depth= 3.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.23"

Area (sf)	CN	Description
1,238	98	Paved parking, HSG A
9,896	98	Roofs, HSG A
11,134	98	Weighted Average
11,134		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Assumed

Summary for Reach SP1: Study Point 1

Inflow Area = 11,134 sf, 100.00% Impervious, Inflow Depth = 3.00" for 2-Year event

Inflow = 0.83 cfs @ 12.07 hrs, Volume= 2,781 cf

Outflow = 0.83 cfs @ 12.07 hrs, Volume= 2,781 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 3

2729-02_Existing-Conditions

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Type III 24-hr 10-Year Rainfall=4.90"

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Page 7

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points x 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment E-1: Subcat E-1

Runoff Area=11,134 sf 100.00% Impervious Runoff Depth=4.66"

Tc=5.0 min CN=98 Runoff=1.27 cfs 4,327 cf

Reach SP1: Study Point 1

Inflow=1.27 cfs 4,327 cf

Outflow=1.27 cfs 4,327 cf

Total Runoff Area = 11,134 sf Runoff Volume = 4,327 cf Average Runoff Depth = 4.66"
0.00% Pervious = 0 sf 100.00% Impervious = 11,134 sf

2729-02_Existing-Conditions

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Type III 24-hr 10-Year Rainfall=4.90"

Printed 10/23/2020

Page 8

Summary for Subcatchment E-1: Subcat E-1

Runoff = 1.27 cfs @ 12.07 hrs, Volume= 4,327 cf, Depth= 4.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.90"

Area (sf)	CN	Description
1,238	98	Paved parking, HSG A
9,896	98	Roofs, HSG A
11,134	98	Weighted Average
11,134		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Assumed

Summary for Reach SP1: Study Point 1

Inflow Area = 11,134 sf, 100.00% Impervious, Inflow Depth = 4.66" for 10-Year event

Inflow = 1.27 cfs @ 12.07 hrs, Volume= 4,327 cf

Outflow = 1.27 cfs @ 12.07 hrs, Volume= 4,327 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 3

2729-02_Existing-Conditions

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Type III 24-hr 100-Year Rainfall=8.89"

Printed 10/23/2020

Page 9

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points x 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment E-1: Subcat E-1

Runoff Area=11,134 sf 100.00% Impervious Runoff Depth=8.65"

Tc=5.0 min CN=98 Runoff=2.31 cfs 8,025 cf

Reach SP1: Study Point 1

Inflow=2.31 cfs 8,025 cf

Outflow=2.31 cfs 8,025 cf

Total Runoff Area = 11,134 sf Runoff Volume = 8,025 cf Average Runoff Depth = 8.65"
0.00% Pervious = 0 sf 100.00% Impervious = 11,134 sf

2729-02_Existing-Conditions

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Type III 24-hr 100-Year Rainfall=8.89"

Printed 10/23/2020

Page 10

Summary for Subcatchment E-1: Subcat E-1

Runoff = 2.31 cfs @ 12.07 hrs, Volume= 8,025 cf, Depth= 8.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.89"

Area (sf)	CN	Description
1,238	98	Paved parking, HSG A
9,896	98	Roofs, HSG A
11,134	98	Weighted Average
11,134		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Assumed

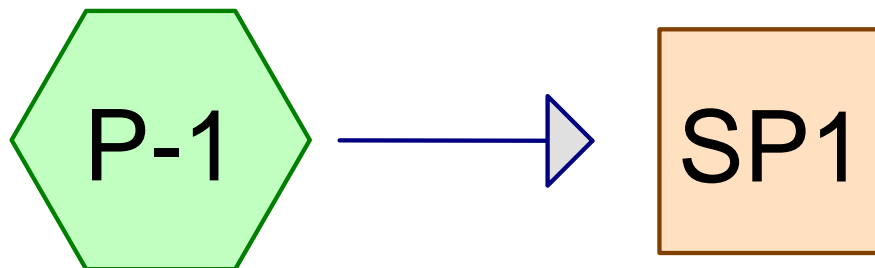
Summary for Reach SP1: Study Point 1

Inflow Area = 11,134 sf, 100.00% Impervious, Inflow Depth = 8.65" for 100-Year event

Inflow = 2.31 cfs @ 12.07 hrs, Volume= 8,025 cf

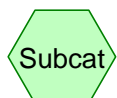
Outflow = 2.31 cfs @ 12.07 hrs, Volume= 8,025 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 3



Subcat P-1

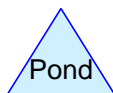
Study Point 1



Subcat



Reach



Pond



Link

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Page 2

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
701	39	>75% Grass cover, Good, HSG A (P-1)
669	98	Paved parking, HSG A (P-1)
9,764	98	Roofs, HSG A (P-1)
11,134	94	TOTAL AREA

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Page 3

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
11,134	HSG A	P-1
0	HSG B	
0	HSG C	
0	HSG D	
0	Other	
11,134		TOTAL AREA

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Page 4

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Subcatchment Numbers
701	0	0	0	0	701	>75% Grass cover, Good	P-1
669	0	0	0	0	669	Paved parking	P-1
9,764	0	0	0	0	9,764	Roofs	P-1
11,134	0	0	0	0	11,134	TOTAL AREA	

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Type III 24-hr 2-Year Rainfall=3.23"

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Page 5

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points x 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment P-1: Subcat P-1

Runoff Area=11,134 sf 93.71% Impervious Runoff Depth=2.57"

Tc=5.0 min CN=94 Runoff=0.76 cfs 2,387 cf

Reach SP1: Study Point 1

Inflow=0.76 cfs 2,387 cf

Outflow=0.76 cfs 2,387 cf

Total Runoff Area = 11,134 sf Runoff Volume = 2,387 cf Average Runoff Depth = 2.57"
6.29% Pervious = 701 sf 93.71% Impervious = 10,433 sf

2729-02_Proposed-Conditions

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Type III 24-hr 2-Year Rainfall=3.23"

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Page 6

Summary for Subcatchment P-1: Subcat P-1

Runoff = 0.76 cfs @ 12.07 hrs, Volume= 2,387 cf, Depth= 2.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Type III 24-hr 2-Year Rainfall=3.23"

Area (sf)	CN	Description
9,764	98	Roofs, HSG A
701	39	>75% Grass cover, Good, HSG A
669	98	Paved parking, HSG A
11,134	94	Weighted Average
701		6.29% Pervious Area
10,433		93.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Assumed

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Type III 24-hr 2-Year Rainfall=3.23"

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Page 7

Summary for Reach SP1: Study Point 1

Inflow Area = 11,134 sf, 93.71% Impervious, Inflow Depth = 2.57" for 2-Year event
Inflow = 0.76 cfs @ 12.07 hrs, Volume= 2,387 cf
Outflow = 0.76 cfs @ 12.07 hrs, Volume= 2,387 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 3

2729-02_Proposed-Conditions

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Type III 24-hr 10-Year Rainfall=4.90"

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Page 8

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points x 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment P-1: Subcat P-1

Runoff Area=11,134 sf 93.71% Impervious Runoff Depth=4.21"

Tc=5.0 min CN=94 Runoff=1.22 cfs 3,906 cf

Reach SP1: Study Point 1

Inflow=1.22 cfs 3,906 cf

Outflow=1.22 cfs 3,906 cf

Total Runoff Area = 11,134 sf Runoff Volume = 3,906 cf Average Runoff Depth = 4.21"
6.29% Pervious = 701 sf 93.71% Impervious = 10,433 sf

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Type III 24-hr 10-Year Rainfall=4.90"

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Page 9

Summary for Subcatchment P-1: Subcat P-1

Runoff = 1.22 cfs @ 12.07 hrs, Volume= 3,906 cf, Depth= 4.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Type III 24-hr 10-Year Rainfall=4.90"

Area (sf)	CN	Description
9,764	98	Roofs, HSG A
701	39	>75% Grass cover, Good, HSG A
669	98	Paved parking, HSG A
11,134	94	Weighted Average
701		6.29% Pervious Area
10,433		93.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Assumed

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Type III 24-hr 10-Year Rainfall=4.90"

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Page 10

Summary for Reach SP1: Study Point 1

Inflow Area = 11,134 sf, 93.71% Impervious, Inflow Depth = 4.21" for 10-Year event
Inflow = 1.22 cfs @ 12.07 hrs, Volume= 3,906 cf
Outflow = 1.22 cfs @ 12.07 hrs, Volume= 3,906 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 3

2729-02_Proposed-Conditions

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Type III 24-hr 100-Year Rainfall=8.89"

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Page 11

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points x 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment P-1: Subcat P-1

Runoff Area=11,134 sf 93.71% Impervious Runoff Depth=8.17"

Tc=5.0 min CN=94 Runoff=2.28 cfs 7,578 cf

Reach SP1: Study Point 1

Inflow=2.28 cfs 7,578 cf

Outflow=2.28 cfs 7,578 cf

Total Runoff Area = 11,134 sf Runoff Volume = 7,578 cf Average Runoff Depth = 8.17"
6.29% Pervious = 701 sf 93.71% Impervious = 10,433 sf

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Type III 24-hr 100-Year Rainfall=8.89"

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Page 12

Summary for Subcatchment P-1: Subcat P-1

Runoff = 2.28 cfs @ 12.07 hrs, Volume= 7,578 cf, Depth= 8.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.89"

Area (sf)	CN	Description
9,764	98	Roofs, HSG A
701	39	>75% Grass cover, Good, HSG A
669	98	Paved parking, HSG A
11,134	94	Weighted Average
701		6.29% Pervious Area
10,433		93.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Assumed

2729-02_Proposed-Conditions

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Type III 24-hr 100-Year Rainfall=8.89"

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Page 13

Summary for Reach SP1: Study Point 1

Inflow Area = 11,134 sf, 93.71% Impervious, Inflow Depth = 8.17" for 100-Year event

Inflow = 2.28 cfs @ 12.07 hrs, Volume= 7,578 cf

Outflow = 2.28 cfs @ 12.07 hrs, Volume= 7,578 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 3

Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Smoothing	Yes
State	Massachusetts
Location	
Longitude	71.142 degrees West
Latitude	42.405 degrees North
Elevation	0 feet
Date/Time	Fri, 28 Aug 2020 14:10:00 -0400

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.28	0.43	0.53	0.70	0.87	1.10	1yr	0.75	1.04	1.28	1.63	2.09	2.69	2.94	1yr	2.38	2.83	3.29	3.98	4.65	1yr
2yr	0.35	0.54	0.67	0.88	1.11	1.40	2yr	0.96	1.28	1.62	2.04	2.57	3.23	3.59	2yr	2.86	3.45	3.95	4.70	5.35	2yr
5yr	0.42	0.65	0.81	1.09	1.39	1.77	5yr	1.20	1.61	2.06	2.60	3.26	4.09	4.56	5yr	3.62	4.38	5.00	5.97	6.69	5yr
10yr	0.47	0.74	0.93	1.27	1.65	2.12	10yr	1.42	1.91	2.47	3.12	3.92	4.90	5.47	10yr	4.33	5.26	5.99	7.15	7.92	10yr
25yr	0.56	0.89	1.13	1.56	2.06	2.67	25yr	1.78	2.40	3.13	3.96	4.98	6.20	6.96	25yr	5.49	6.69	7.59	9.10	9.91	25yr
50yr	0.63	1.01	1.30	1.82	2.45	3.21	50yr	2.12	2.86	3.77	4.78	5.98	7.43	8.36	50yr	6.57	8.03	9.08	10.92	11.75	50yr
100yr	0.73	1.18	1.52	2.14	2.92	3.84	100yr	2.52	3.40	4.52	5.73	7.17	8.89	10.04	100yr	7.87	9.65	10.88	13.10	13.94	100yr
200yr	0.83	1.36	1.76	2.52	3.47	4.60	200yr	2.99	4.05	5.43	6.89	8.61	10.65	12.07	200yr	9.43	11.60	13.03	15.73	16.54	200yr
500yr	1.01	1.65	2.16	3.13	4.37	5.83	500yr	3.77	5.11	6.90	8.77	10.97	13.54	15.40	500yr	11.98	14.81	16.55	20.05	20.75	500yr

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.25	0.38	0.46	0.62	0.76	0.85	1yr	0.66	0.83	1.15	1.44	1.78	2.44	2.50	1yr	2.16	2.41	2.93	3.53	4.05	1yr
2yr	0.33	0.51	0.63	0.85	1.05	1.26	2yr	0.91	1.23	1.45	1.91	2.48	3.13	3.47	2yr	2.77	3.33	3.82	4.53	5.18	2yr
5yr	0.39	0.60	0.75	1.02	1.30	1.51	5yr	1.12	1.47	1.73	2.24	2.89	3.77	4.18	5yr	3.34	4.02	4.59	5.47	6.17	5yr
10yr	0.44	0.67	0.83	1.16	1.50	1.73	10yr	1.29	1.69	1.95	2.53	3.24	4.35	4.83	10yr	3.85	4.65	5.27	6.29	7.01	10yr

131 of 239

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
25yr	0.50	0.77	0.95	1.36	1.79	2.05	25yr	1.54	2.00	2.31	2.96	3.78	5.23	5.82	25yr	4.63	5.60	6.31	7.52	8.29	25yr
50yr	0.56	0.85	1.06	1.52	2.05	2.35	50yr	1.77	2.30	2.61	3.34	4.24	5.99	6.70	50yr	5.30	6.44	7.22	8.60	9.39	50yr
100yr	0.63	0.95	1.18	1.71	2.35	2.68	100yr	2.03	2.62	2.96	3.62	4.77	6.89	7.70	100yr	6.10	7.41	8.27	9.79	10.65	100yr
200yr	0.70	1.06	1.34	1.94	2.71	3.06	200yr	2.34	2.99	3.36	4.05	5.37	7.91	8.86	200yr	7.00	8.52	9.46	11.12	12.03	200yr
500yr	0.82	1.23	1.58	2.29	3.26	3.65	500yr	2.81	3.57	3.97	4.70	6.29	9.50	10.64	500yr	8.41	10.23	11.30	13.12	14.12	500yr

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.31	0.48	0.58	0.79	0.97	1.13	1yr	0.83	1.11	1.32	1.77	2.25	2.86	3.17	1yr	2.53	3.05	3.51	4.29	5.03	1yr
2yr	0.36	0.56	0.69	0.94	1.15	1.36	2yr	1.00	1.33	1.57	2.08	2.68	3.35	3.74	2yr	2.97	3.59	4.11	4.89	5.55	2yr
5yr	0.45	0.70	0.86	1.19	1.51	1.79	5yr	1.30	1.75	2.05	2.66	3.39	4.44	5.00	5yr	3.93	4.81	5.43	6.48	7.21	5yr
10yr	0.55	0.84	1.05	1.46	1.89	2.20	10yr	1.63	2.15	2.55	3.22	4.07	5.51	6.25	10yr	4.88	6.01	6.72	8.04	8.83	10yr
25yr	0.71	1.08	1.35	1.92	2.53	2.90	25yr	2.19	2.83	3.39	4.16	5.17	7.32	8.42	25yr	6.48	8.09	8.92	10.74	11.56	25yr
50yr	0.86	1.31	1.64	2.35	3.17	3.59	50yr	2.73	3.51	4.21	5.05	6.22	9.08	10.54	50yr	8.04	10.14	11.04	13.40	14.18	50yr
100yr	1.06	1.60	2.00	2.89	3.96	4.42	100yr	3.42	4.32	5.22	6.37	7.47	11.28	13.22	100yr	9.98	12.71	13.68	16.75	17.43	100yr
200yr	1.29	1.94	2.45	3.55	4.95	5.46	200yr	4.27	5.34	6.49	7.78	8.96	14.02	16.60	200yr	12.41	15.96	16.97	20.95	21.46	200yr
500yr	1.68	2.50	3.21	4.67	6.63	7.20	500yr	5.72	7.04	8.66	10.14	11.41	18.71	22.44	500yr	16.56	21.58	22.57	28.20	28.29	500yr





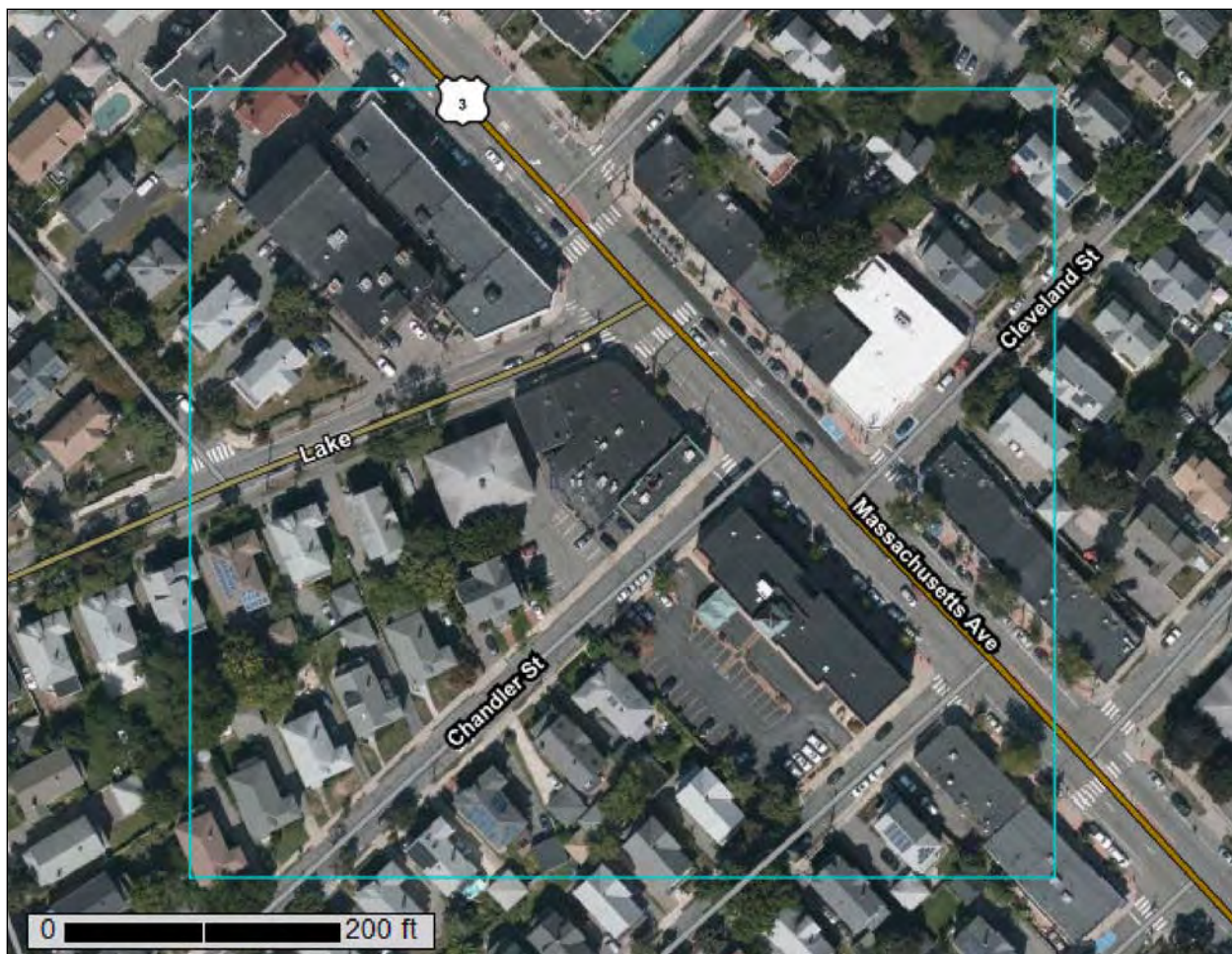
United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for Middlesex County, Massachusetts



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

Preface	2
How Soil Surveys Are Made	5
Soil Map	8
Soil Map.....	9
Legend.....	10
Map Unit Legend.....	11
Map Unit Descriptions.....	11
Middlesex County, Massachusetts.....	13
602—Urban land.....	13
626B—Merrimac-Urban land complex, 0 to 8 percent slopes.....	13
Soil Information for All Uses	16
Soil Properties and Qualities.....	16
Soil Physical Properties.....	16
Saturated Hydraulic Conductivity (Ksat).....	16
Soil Qualities and Features.....	19
Hydrologic Soil Group.....	19
References	24

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
602	Urban land	6.6	79.8%
626B	Merrimac-Urban land complex, 0 to 8 percent slopes	1.7	20.2%
Totals for Area of Interest		8.3	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Middlesex County, Massachusetts

602—Urban land

Map Unit Setting

National map unit symbol: 9950
Elevation: 0 to 3,000 feet
Mean annual precipitation: 32 to 50 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 110 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting

Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Excavated and filled land

Minor Components

Rock outcrop

Percent of map unit: 5 percent
Landform: Ledges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Head slope
Down-slope shape: Concave
Across-slope shape: Concave

Udorthents, wet substratum

Percent of map unit: 5 percent
Hydric soil rating: No

Udorthents, loamy

Percent of map unit: 5 percent
Hydric soil rating: No

626B—Merrimac-Urban land complex, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2tyr9
Elevation: 0 to 820 feet
Mean annual precipitation: 36 to 71 inches

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Mean annual air temperature: 39 to 55 degrees F

Frost-free period: 140 to 250 days

Farmland classification: Not prime farmland

Map Unit Composition

Merrimac and similar soils: 45 percent

Urban land: 40 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Merrimac

Setting

Landform: Eskers, moraines, outwash terraces, outwash plains, kames

Landform position (two-dimensional): Backslope, footslope, summit, shoulder

Landform position (three-dimensional): Side slope, crest, riser, tread

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Loamy glaciofluvial deposits derived from granite, schist, and gneiss over sandy and gravelly glaciofluvial deposits derived from granite, schist, and gneiss

Typical profile

Ap - 0 to 10 inches: fine sandy loam

Bw1 - 10 to 22 inches: fine sandy loam

Bw2 - 22 to 26 inches: stratified gravel to gravelly loamy sand

2C - 26 to 65 inches: stratified gravel to very gravelly sand

Properties and qualities

Slope: 0 to 8 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat excessively drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 2 percent

Maximum salinity: Nonsaline (0.0 to 1.4 mmhos/cm)

Sodium adsorption ratio, maximum: 1.0

Available water capacity: Low (about 4.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: A

Ecological site: F144AY022MA - Dry Outwash

Hydric soil rating: No

Description of Urban Land

Typical profile

M - 0 to 10 inches: cemented material

Properties and qualities

Slope: 0 to 8 percent

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Depth to restrictive feature: 0 inches to manufactured layer

Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)

Available water capacity: Very low (about 0.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8

Hydrologic Soil Group: D

Hydric soil rating: Unranked

Minor Components

Windsor

Percent of map unit: 5 percent

Landform: Dunes, outwash terraces, deltas, outwash plains

Landform position (three-dimensional): Tread, riser

Down-slope shape: Convex, linear

Across-slope shape: Convex, linear

Hydric soil rating: No

Sudbury

Percent of map unit: 5 percent

Landform: Outwash plains, terraces, deltas

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Tread, dip

Down-slope shape: Concave

Across-slope shape: Linear

Hydric soil rating: No

Hinckley

Percent of map unit: 5 percent

Landform: Eskers, kames, deltas, outwash plains

Landform position (two-dimensional): Summit, shoulder, backslope

Landform position (three-dimensional): Nose slope, side slope, crest, head slope, rise

Down-slope shape: Convex

Across-slope shape: Convex, linear

Hydric soil rating: No

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Physical Properties

Soil Physical Properties are measured or inferred from direct observations in the field or laboratory. Examples of soil physical properties include percent clay, organic matter, saturated hydraulic conductivity, available water capacity, and bulk density.

Saturated Hydraulic Conductivity (Ksat)

Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. The estimates are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity is considered in the design of soil drainage systems and septic tank absorption fields.

For each soil layer, this attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.


The numeric Ksat values have been grouped according to standard Ksat class limits.

Custom Soil Resource Report
Map—Saturated Hydraulic Conductivity (Ksat)




MAP LEGEND


Area of Interest (AOI)

 Area of Interest (AOI)


Soils


Soil Rating Polygons

 = 100.0000


 Not rated or not available


Soil Rating Lines

 = 100.0000


 Not rated or not available

Soil Rating Points


 = 100.0000


 Not rated or not available


Water Features


 Streams and Canals


Transportation

 Rails


 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:25,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL: [Web Soil Survey](#)

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Middlesex County, Massachusetts

Survey Area Data: Version 20, Jun 9, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 11, 2019—Oct 5, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Saturated Hydraulic Conductivity (Ksat)

Map unit symbol	Map unit name	Rating (micrometers per second)	Acres in AOI	Percent of AOI
602	Urban land		6.6	79.8%
626B	Merrimac-Urban land complex, 0 to 8 percent slopes	100.0000	1.7	20.2%
Totals for Area of Interest			8.3	100.0%

Rating Options—Saturated Hydraulic Conductivity (Ksat)

Units of Measure: micrometers per second

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Fastest

Interpret Nulls as Zero: No

Layer Options (Horizon Aggregation Method): Depth Range (Weighted Average)

Top Depth: 12

Bottom Depth: 120

Units of Measure: Inches

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

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Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Custom Soil Resource Report
Map—Hydrologic Soil Group



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:25,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Middlesex County, Massachusetts
Survey Area Data: Version 20, Jun 9, 2020

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Date(s) aerial images were photographed: Sep 11, 2019—Oct 5, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
602	Urban land		6.6	79.8%
626B	Merrimac-Urban land complex, 0 to 8 percent slopes	A	1.7	20.2%
Totals for Area of Interest			8.3	100.0%

Rating Options—Hydrologic Soil Group

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

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Town of Arlington, Massachusetts

Updates to Housing Production Plan and Open Space and Recreation Plan

Summary:

7:05 p.m. Staff will provide an update on the HPP and OSRP plan processes, including community engagement and timelines.

Staff will provide update, Board will discuss.

ATTACHMENTS:

Type	File Name	Description
Reference Material	Agenda_Item_2A__OSRP_Timeline.pdf	OSRP Timeline
Reference Material	Agenda_Item_2B__OSRP_Public_Participation_Plan.pdf	OSRP Public Participation Plan
Reference Material	Agenda_Item_2C_Horsley_Witten_Proposal_Arlington_OSRP.pdf	Horsley Witten Proposal Arlington OSRP
Reference Material	Agenda_Item_2D_Arlington_HPP_Community_Engagement_Plan_and_Timeline.pdf	Arlington HPP Community Engagement Plan and Timeline
Reference Material	Agenda_Item_2E_Barrett_Horsely_Witten_HPP.pdf	Barrett Horsely Witten HPP

Proposed Timeline - Arlington Open Space and Recreation Plan Update

2021													2022				
Tasks	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Task 1. Public Outreach and Meetings																	
1.1 Open Space Committee Meetings		M		M		M		M			M						
1.2 Ongoing Public Engagement Strategies																	
1.3 Community Survey																	
1.4 Public Workshops						P						P					
Task 2. Review of Existing Plans																	
Task 3. Mapping																	
Task 4. Plan Development																	
4.1 Sections 2 through 5																	
4.2 Sections 6 through 9																	
4.3 Assembling the Plan																	
4.4 Plan Approval																	

M - Meeting with Open Space Committee

P - Public Workshop/Larger Public Event

S - Survey

Public Outreach Activities																	
Town Staff Interviews (HW)																	
Public Workshop #1 & Follow up Survey (HW)						P S											
Meetings in a Box (OSC)																	
Targeted Engagement (2-3 meetings) (HW, OSC)																	
Listening Posts (OSC)																	
Survey on Goals & Objectives (HW)																	
Follow up with Town Staff, Committees on Draft Action Plan (HW)																	
Public Workshop/Event #2 (HW)																	

Arlington Open Space and Recreation Plan

Public Participation Plan

The Public Participation Plan is an internal working document used by the Arlington Open Space Committee (OSC) and the Town of Arlington to guide public outreach and communications for the Open Space and Recreation Plan (OSRP) update.

I. Messaging

A. Key Messages

To ensure that all OSC members are sharing the same message about the OSRP and the update process, the following are primary talking points.

Elevator Speech

Key points to make:

- **Keeping the OSRP current allows the Town to maintain and enhance the benefits of its open space and recreation resources.** These resources provide environmental, social, and economic benefits for Arlington residents. Natural areas remove air pollutants, protect and enhance water quality, and provide wildlife habitat. These resources also contribute to our quality of life, giving us places to be active and gather as a community. Parks and open space boost property values and increase municipal revenue.
- **This is your town. Be a part of it!** The OSRP is shaped by the community. It takes into consideration the open space and recreational needs of residents and outlines an action plan to address those needs. Everyone is invited to participate and have their voices heard through an open and transparent process.
- **Having an approved OSRP keeps the Town eligible and in position to acquire funding.** Having an approved OSRP keeps the Town eligible for funding from the Commonwealth and provides a basis of public support for other funding opportunities.
- **The OSRP serves as Town policy for open space, natural resources, and recreation issues.** In concert with the 2015 Master Plan and other Town reports and plans, the OSRP lays out goals and objectives that guide relevant departments, commissions, and other groups in making decisions that affect our natural environment and recreational opportunities.

B. Key Project Information

- Key Contacts
OSRPUpdate@town.arlington.ma.us
Emily Sullivan, Environmental Planner and Conservation Agent, esullivan@town.arlington.ma.us, 781-316-3012
Ann LeRoy, Open Space Committee Chair

- Timeline: January 2021 to March 2022

II. Public Engagement Strategies

The following outlines the different methods that will be used to collect public input during the update process. These methods will be used to document community needs and feedback on the draft OSRP.

A. Interviews with Municipal Staff by HW

HW will conduct interviews with municipal staff as part of updating and factfinding for Sections 3: Community Setting and 4: Environmental Inventory and Analysis of the OSRP. Additionally, a group work session will be an opportunity to discuss the management and operational needs of municipal departments and/or committees. This discussion will help HW draft parts of Section 7: Resource Protection Needs and Management Needs/Change of Use. Needs as well as actions for the Section 9: Action Plan will be discussed. These meetings will take place virtually, and possibly outside of regularly scheduled OSC meetings.

- Planning and Community Development Department
- Department of Public Works
- Recreation Department
- Council on Aging
- Disability Commission
- Town Manager's Office
- School Department

B. Targeted Engagement of Non-Municipal Groups by HW

There may be other opportunities to interview or organize group meetings with non-municipal individuals and organizations as part of either the fact-finding effort or public input (or both). This can be a strategy to reach and engage residents that have special needs or do not participate in more traditional public events like workshops, including representatives of Environmental Justice Communities, youth, and seniors. These meetings can be led by HW or the OSC through a Meeting in a Box (see below). They will require specific planning to account for those that may not have access to the internet for virtual meetings. Coordination with local social service organizations, Town departments, or community groups that have regular contact with these individuals will help understand barriers and the best way to reach them if accommodations cannot be made.

Proposed during the early stages of the update process, the discussion at these meetings would follow questions asked during the first public workshop (see below).

Possible organizations and groups to target:

- Boys and Girls Club
- Arlington Housing Authority
- Housing Corporation of Arlington
- Youth sports groups

C. Meeting in a Box

OSC members who are interested can hold input meetings with town committees and boards, as well as local groups and organizations they are involved with. The purpose of these meetings will pose

questions to help understand community needs and how the OSRP can help committees meet their goals and objectives. HW will provide meeting materials and training for OSC members, as needed.

Possible organizations and groups to target:

- Specific neighborhood organizations or precincts
- Arlington Eats
- FoodLink
- Youth sports groups
- Park & Recreation Commission
- Conservation Commission
- Sustainable Arlington
- Redevelopment Board

D. Virtual Public Workshops

Below are suggested outlines and format options for two public workshops. See separate proposed logistics as workshops are planned.

Workshop #1 – Identifying Community Needs (June 10, 2021)

Purpose

- Explain the importance of the OSRP.
- Review the update process.
- Understand community needs and if they are being met.

Format Option

- Formal presentation with small groups (virtual).
 - What are we doing well, what could be better, what are new ideas?

Workshop #2 – Vetting Action Plan (Winter 2022)

Purpose

- Recap the OSRP update process and work done to date.
- Describe how the Action Plan was developed.
- Get feedback from community if draft actions are on track, need adjustment, or not appropriate for Arlington.

Format Options

- Formal presentation (to be determined).
- Online open house with surveys (also see below).
- Combination of both.

E. Online Surveys

Online surveys will be used throughout the update process. See separate proposed logistics as surveys are planned.

Purpose

- Allow individuals and groups to provide input at their own pace and on their own schedule.

- Allow OSC/Town to follow up on specific ideas or strategies learned during other public input strategies.

Format Options

- Online surveys: traditional questionnaires with accompanying graphics.
- Geo-mapping survey: questionnaires asking participants to pinpoint locations on a map, upload photos, etc.

Comprehensive Community Survey

A comprehensive community survey helps us understand users' experiences at Arlington conservation and recreational areas, opinions on policies the Town currently implements, and reactions to potentially new approaches. Reviewing surveys conducted for past OSRP updates can be used to develop a new survey and gauge changing needs and/or interests. Paper copies can be made available upon request.

Follow-up Surveys

Geo-mapping surveys and shorter surveys (3 to 5 questions) will be used as follow-up to the community survey and/or public workshop. For example, a follow up survey can also be used to review goals and objectives or get feedback on more refined policies or projects. Geo-mapping surveys can ask follow-up questions about maintenance or needed amenities at specific conservation areas or parks, or which neighborhoods need more access to resources. Geo-mapping surveys might also be more engaging for youth than a standard survey.

F. Listening Posts

While posters can be used to promote upcoming events, they can also be used as "listening posts." Boards describe ideas and pose questions, but, in compliance with public health protocols, instead of offering sticky notes for responses or dot voting, people can scan a code or use a website that directs them to an online survey or form to provide their answers and ideas. Listening posts can be set up at Town buildings that are open, or open by appointment, but also, when the weather is warmer, during outdoor events, such as a farmer's market. Listening posts can also be strategically placed in various open spaces. If permitted a representative could be at the post, respecting social distance requirements and other health and safety protocols.

Possible events to target:

- Farmers' Market
- Town Day (?)
- OSC Members at specific parks

III. Promoting Public Events and Project

This section lists the ways events and input opportunities above are promoted.

A. Media Outreach

HW will work with Emily and Ann to draft press releases for local media outlets. All press releases would be circulated to the full OSC for approval prior to dissemination.

ACMi

HW, Emily, and Ann will coordinate with ACMi as events are planned and when public input opportunities are available. Work with Arlington's Public Information Officer, Joan Roman, will be consulted to coordinate with ACMi and for all Town web- and email-based communications.

Contact: Joan Roman, jroman@town.arlington.ma.us

Other Media

Arlington Advocate, Your Arlington, Patch

If OSC members are interested in writing Op Eds for *Your Arlington*, HW will assist as needed.
<https://www.yourarlington.com/easyblog/entry/70-letters/2631-yourletters-19>

Contact: Bob Sprague

B. Targeted Community Groups and Organizations

Keeping a running list of community groups and organizations that should receive announcements about the OSRP is critical and must be updated regularly. Organizations can be asked to distribute announcements to their members or post on their website, online calendar, or social media presence. This list should include those that have physical or digital newsletters or email distribution lists. Identifying an OSC member that will be the primary contact and reach out to the group/organization will ensure that everyone is contacted. **Note that contact information (emails, phone numbers, etc.) is available in a separate file.**

The OSC will also conduct targeted outreach to Environmental Justice (EJ) communities, as identified by the State's Executive Office of Energy and Environmental Affairs, and CDBG communities. This targeted outreach will include door hangers inviting residents to participate in upcoming workshops, as well as direct outreach at the parks and open spaces in EJ and CDBG neighborhoods. The OSC will meet these communities where they live and play to get their input in this plan update.

Groups/Organizations that will be asked to help distribute information about project events

Organization	Contact	OSC Contact (if needed)
Arlington Dog Owners Group (A-DOG)	Susan Doctrow	David White
Arlington EATS	Andi Doane	
Arlington Garden Club	Alice (Lolly) Bennett	
Arlington Land Trust	Christopher Leich	Ann LeRoy
Arlington Reservoir Committee	David White	David White
Friends of Alewife Reservation	Ellen Mass	
Friends of Arlington's Great Meadows	David White	David White
Friends of Magnolia Park	Nancy Zimmerman	
Friends of Menotomy Rocks Park	Judy Weinberg	
Friends of Robbins Farm Park	Elaine Backman	Elisabeth Carr-Jones
Friends of Spy Pond Park	Karen Grossman	
Friends of the Robbins Town Garden	Miriam Levine	

Organization	Contact	OSC Contact (if needed)
Coalition to Save the Mugar Wetlands	Jeannette Cummings	
Spy Pond Committee	Brad Barber	David White
Sustainable Arlington	Brucie Moulton	
Tree Committee	Susan Stamps	
Zero Waste Committee	Charlotte Milan	
Bicycle Advisory Committee (ABAC)	Dan Amstutz	
Capital Planning Committee	Sandy Pooler and Timur Yontar	
Cemetery Commission	Michele Hassler	
Commission for Arts and Culture	Adria Arch	
Community Preservation Act Committee	Clarissa Rowe	
Conservation Commission	Emily Sullivan	
Conservation Land Stewards	Emily Sullivan	
Council on Aging	Kristine Shah	
Disability Commission	Jill Harvey	
Envision Arlington Steering Committee	Greg Christiana and Scott Lever	
Historic Districts Commission	Carol Greeley	
Historical Commission	Victoria Rose	
Human Rights Commission	Jill Harvey	
Long Range Planning Committee	Sandy Pooler	
Master Plan Advisory Committee	Jenny Raitt	
Park and Recreation Commission	Joe Connelly	
Redevelopment Board	Jenny Raitt	
School Green Teams	Rachel Oliveri	
Tourism and Economic Development	Angela Olszewski	
Transportation Advisory Committee	Dan Amstutz	
Zoning Board of Appeals	Christian Klein	
Walking in Arlington	Rachel Stark	
Arlington Housing Authority	John Griffin	
Housing Corporation of Arlington	Pam Hallett	
Town Departments		
Arlington School Department	Julie Dunn, School Superintendent – how to best reach out to PTOs	
Arlington Public Library	Andrea Nicolay	
Arlington Recreation Department	Zachary Vaillette	
Arlington Planning and Community Development	Jennifer Raitt	
Health and Human Services (AYCC, COA, Disability Commission)	Christine Bongiorno, Jill Harvey,	

C. *Methods*

The following are different ways the OSC will use to promote events and the project. Content will have details about the event or encourage people to go to the project website for more information about

what's happening. It will be determined on a case-by-case basis which formats will be used, but generally, the OSC supports these methods to reach residents.

Even with events and input opportunities taking place online due to social gathering limitations and public health concerns, it is important to make sure that promotion is done both electronically and in paper format.

Posters: Posters are generally 24x36 or 18x24 and typically require mounting on/clipping to foam core and an easel for display at Town Hall, schools, library, and other locations. Use will be determined based on local, regional, and state protocols and measures in place to protect public health and access to these locations by the public. Also see Town Bulletin Boards below.

Flyers & Postcards: Flyers are generally 8.5x11 and postcards are 4x6. Both can be paper and electronic. Electronic flyers and postcards are easy to send to targeted community groups and stakeholders by email and, due to their size, printed versions may also be easier to post than posters in the Town's locked bulletin boards (see below) as well as community bulletin boards at local grocery stores, pharmacies, and other retail establishments. HW will coordinate printing with the Town as needed.

Town Bulletin Boards/Alerts: Another low-tech way of promoting the project website and available input opportunities is using the Town's locked bulletin boards in commercial areas and boards in some parks and recreation facilities. HW will coordinate printing with the Town for upcoming events.

OSRP E-News: HW will set up an E-News distribution list on MailChimp. Targeted community groups and organizations listed above will be used as the starting outreach list of emails. Emails voluntarily provided by survey respondents or collected during registration for virtual meetings would also be added.

Email Signature: Town Staff and OSC may consider adding brief "advertisements" to their email signatures, encouraging people to visit the project website or an upcoming public event (this would be attached to all outgoing e-mail messages).

Arlington is updating its Open Space and Recreation Plan! Visit XXX to learn about the plan, the update process, and how you can participate.

Town's Website: Post information/updates about the project throughout the Town's website and calendar of events page that directs people to the project website.

Social Media: Postings on the Town's Facebook page and Twitter account. A list of posts can be prepared ahead of time for continuous and consistent messaging. The OSC social media accounts can share the Town's social media postings about the OSRP update. OSC social media managed by Wendy, Town social media managed by Joan Roman.

Personal Announcements/Piggyback at Other Meetings: Town Staff and OSC members frequently participate in other town meetings or community group events. Asking for an opportunity to make announcement about an upcoming OSRP event or public input opportunity can help spread the word to individuals that might not have heard otherwise. HW can help with preparing announcements and key points to make, as requested.

Door Hangers: Door hangers are a good option to reach residents that may have limited interaction with Town Hall or not receive notifications or frequently visit the Town's website. They can be hung in targeted neighborhoods. Hangers can promote an upcoming public event/opportunity with a website address or QR code to the survey or input form. HW will coordinate with Town in printing/production.

Lawn Signs: Lawn signs are small and will be used to display the project website. They should be strategically placed, such as along a bike path or in parks. HW will coordinate with Town in printing/production.



Technical Proposal for Open Space and Recreation Plan Update RFQ # 20-45

Arlington, Massachusetts

October 29, 2020



Prepared for:
Town Manager's/Purchasing Office
Town Hall Annex 2nd Floor
730 Massachusetts Avenue
Arlington, MA 02476

Prepared by:
Horsley Witten Group, Inc.



October 29, 2020

Domenic Lanzillotti
Purchasing Agent
Town of Arlington
Town Hall Annex, 2nd Floor
730 Massachusetts Avenue
Arlington, MA 02476

Re: Request for Quotes
RFQ #20-45 Open Space and Recreation Plan Update - Technical Proposal

Dear Mr. Lanzillotti:

Horsley Witten Group, Inc. (HW) is pleased to submit the enclosed Technical Proposal to provide our professional services for the Town of Arlington. HW is familiar with the Town's Open Space and Recreation Plan (OSRP) and provides the attached scope, fee, and qualifications for your review. Our firm has worked (and continues to work) with many Massachusetts communities in the successful updating of OSRPs, most recently Billerica, Burlington, Bourne, Brewster (twice), Marshfield, Stoughton (twice), and Weymouth. Our firm understands the tremendous value this plan has at the local level, and we recognize the potential financial gain available to communities that provide an exemplary document to local and state officials. We hope you will enlist our services and provide us with the opportunity to develop a plan that is educational, attractive, and effective.

Thank you for the opportunity to provide this proposal. If you have any questions, please contact me at (401) 272-1717.

Sincerely,

Horsley Witten Group, Inc.

Krista Moravec, AICP
Senior Planner

Enclosures



Arlington Open Space and Recreation Plan Update

Table of Contents

A. Description of the Firm	1
B. Minimum Qualifications	1
C. Selection Criteria	2
D. Approach and Scope of Work.....	3
E. Staffing Plan	11
F. Similar Projects.....	13
G. Proposed Schedule	14

Attachments

Résumés

A. Description of the Firm



The Horsley Witten Group, Inc. (HW) is a full-service planning and engineering firm with offices located in Boston and Sandwich, MA; Providence, Rhode Island; and Exeter, NH. The firm was incorporated in 1988 and consists of a professional staff of over 50 land use planners, engineers, landscape architects, hydrologists, wetland scientists, graphic artists, and other support personnel. HW specializes in providing consulting services in land use planning, zoning and subdivision reform, public outreach, coastal and watershed protection, hydrology, site design, and integrated water management. Our corporate goal is to create innovative solutions to land use problems by successfully integrating our planning, engineering, scientific, and management skills.

With our diverse areas of expertise, HW brings a long history of public participation, outreach, and training to this project and is uniquely qualified to help local stakeholders balance smart growth initiatives and targeted land planning with economic development objectives. HW has assisted over 100 local jurisdictions in planning for growth in their communities. Outreach efforts have included public forums, design charrettes, public surveys, targeted outreach (e.g., chambers of commerce, watershed groups, etc.), and web-page development.

Our corporate goal is to create innovative solutions to land use problems by successfully integrating our planning, engineering, scientific, and management skills.

Over the past 30 years, approximately two-thirds of our client base has been in the public sector covering the entire range of community, county, state, federal and tribal governments. In recent years, 86% of new contracts have been with repeat clients – a testament to the quality of our services and level of client satisfaction.

B. Minimum Qualifications

The following identifies where our proposal we respond to the minimum qualifications outlined by the Town of Arlington in its Request for Quotes (RFQ) to assist in the update of its Open Space and Recreation Plan (OSRP).

1. *The firm/project manager/team must have at least five (5) years of experience in the successful preparation of Open Space and Recreation Plans for similar types of municipalities in Massachusetts.*

HW has been assisting Massachusetts communities in the development and subsequent updates of their OSRPs for over 15 years, starting in 2004 with the Town of Stoughton.

Section F. Similar Projects offers a list of our recent efforts.

- 2. The firm/team must have familiarity with all state guidelines and requirements for such plans. Successful completion and state approval of a minimum of three (3) such projects within the last five (5) years is required, and completion of five (5) overall is desired.*

Also noted in **Section F. Similar Projects** are the approval dates of OSRPs of the communities we served in the last five years, with five plans receiving approval, one under review, and one in progress.

- 3. The principal and project manager to be assigned to this project must be available for meetings with the committee on days or evenings, as required.*

Section E. Staffing Plan identifies Krista Moravec, AICP, as the project manager for the Arlington OSRP update. Krista is available for meetings with the Open Space Committee, days or evenings, as required.

- 4. The volume of the proposed project manager's and firm's current and projected workload must not adversely affect its ability to immediately initiate work and to follow through with the project in a timely and professional manner. The firm and all team members must be capable of devoting a significant amount of time to this project in order to complete the work within the schedule outlined in this RFQ.*

The key personnel listed in **Section E. Staffing Plan** along with supporting scientists, planners, and engineers at HW, have capacity to initiate work and follow through with the update of the Town's OSRP in a timely and professional manner. Our work backlog does not prevent us from dedicating the needed resources to the Town to produce a high quality plan that meets the needs of the community.

C. Selection Criteria

The following identifies where our proposal we respond to the selection criteria outlined by the Town of Arlington in its RFQ.

- 1. Staffing Plan and Methodology, including the professional qualifications of all project personnel with particular attention to training, educational background, professional certification or registration, and professional experience. Demonstrated expertise and experience of the Principal-in-Charge, Project Manager, and other key personnel, and any Consultants to be assigned to the Project, including professional registration of the Consultants and their qualifications.*

Section D. Approach and Scope of Work provides our approach, which reflects our experience with over a dozen OSRPs.

Section E. Staffing Plan highlights our key personnel who will be assigned to the Arlington OSRP update project. Resumes are also attached to this proposal.

2. *Depth of experience with managing and preparing similar Open Space and Recreation Plan updates.*

Section F. Similar Projects provides a list of our most recent OSRPs, both completed and in progress. Links to those available online are provided.

3. *Strength and credibility of client references. The Consultant shall demonstrate prior client satisfaction with working relationship, project management capabilities, technical expertise, and adherence to the state requirements in developing similar projects.*

Section F. Similar Projects also provides contact information for the primary contact at the municipality for the OSRP update process.

4. *Desirability of approach to the project, as well as a demonstrated understanding of all project components and public outreach needs.*

Section D. Approach and Scope of Work details our general process for OSRP updates, which includes how we will interact with the Open Space Committee and public engagement.

5. *Demonstrated ability to meet project budget and project schedule.*

The graphic in **Section G. Proposed Schedule** illustrates the timeline for completing the update. It is organized by task, as presented in Section D.

D. Approach and Scope of Work

HW proposes to lead the update of Arlington's most recent OSRP by using the four tasks described below.

Task 1: Public Outreach and Meetings

The public gathering restrictions imposed to reduce the spread of COVID-19 will likely impact the early outreach efforts of the update process. Even as the Commonwealth reopens and smaller gatherings are allowed, the public may be somewhat apprehensive in attending larger public events. As a result, virtual engagement will continue to be the norm in the coming months, and the Town should assume planning for a virtual platform to replace and/or support any in-person events throughout the update process. The following discussion of public outreach and meetings offers a mix of both in-person and online options to adapt as needed. To be as inclusive as possible, it is important to recognize the limitations of each approach and ensure alternatives are accessible to reach as many residents as we can. Collaborating with

groups such as the Council on Aging, Disability Commission, Housing Authority, and others will help identify gaps and how best to fill them.

1.1. Open Space Committee Meetings

HW proposes to meet with the Open Space Committee a total of five times over the course of the project at various milestones. Each meeting will require that we review and generate a significant amount of material; however, our staff is skilled in facilitating diverse groups, keeping them engaged and focused, and ensuring meetings are productive. A summary of the five meetings is provided below (note the OSRP section numbering used below reflects the Division of Conservation Services (DCS) *Open Space and Recreation Planner's Workbook* (2008)):

Meeting #1 Objectives:

1. Serve as the kickoff meeting to review goals and objectives of the update process, confirm expectations of HW Staff and Town Staff, and review available data, reports, and other information.
2. Receive general feedback on the most recent plan and review Action Plan (Section 9).
3. Determine best sources and contacts for data that is either missing or will be updated within the plan.
4. Draft a detailed public participation strategy that connects public engagement to the development of important milestones across the project.

Meeting #2 Objectives:

1. Review public input strategies that have occurred to date.
2. Review draft maps associated with Sections 2 through 5 (environmental inventory/analysis and open space and recreational sites inventory).
3. Review actual/perceived barriers encountered during initial data and information collection for Sections 2 through 5 and discuss "next steps" to address data gaps.
4. Determine date, location, format, and promotional methods for the first public workshop.

Meeting #3 Objectives:

1. Input on the review of draft Sections 2 through 5.
2. Discuss reactions to the community survey, first public workshop, and other public input strategies that have occurred to date.
3. Identify potential needs and themes for Section 7 (analysis of needs) and identify additional key stakeholders that need to be engaged.
4. Discuss potential revisions to Section 8 (goals and objectives) based on public input.
5. Discuss potential action items for Section 9 (action plan).

Meeting #4 Objectives:

1. Review draft Sections 6 through 9 (community vision, goals and objectives, and analysis of needs).
2. Determine date, location, format, and promotional methods for the second public workshop.

Meeting #5 Objectives:

1. Discuss reactions to the second public workshop and other public input strategies that have occurred to date.
2. Review Section 9 (Action Plan) to determine revisions based on Open Space Committee/Town feedback and outcomes of public input strategies.
3. Review final draft before distribution for comment and review by the Select Board, Planning Board, Conservation Commission, and Metropolitan Area Planning Council (MAPC) (at a minimum).

HW will provide all materials required to facilitate Open Space Committee meetings including, but not limited to, posters and maps, hardcopy drafts, PowerPoint presentations, and handouts.

1.2. Public Participation Strategy

During the first meeting with the Open Space Committee, a public participation strategy will be developed. This strategy will account for any work performed to date by the Open Space Committee, if any, and identify tools to effectively supplement that work. While the final public participation strategy will be developed collaboratively with the Open Space Committee, tools that can be considered include:

E-blast Campaigns

At the core of stakeholder engagement is the need to create a constant, growing awareness of the project. The pool of stakeholders should always be increasing and all of them should know where the project is on the timeline. E-mail is an effective means of maintaining a level of awareness at the community level and we will work with the Town to develop a mailing list that meets the needs of the project.

Local Media

HW staff prepared to develop press releases for the Town if this is deemed to be an effective means of communicating with stakeholders. Like e-blast campaigns, local media is best used to maintain awareness and keep people informed about the progress of the study. We have experience with distribution to local papers, news outlets (e.g., The Arlington Advocate, The Patch), radio, or community television outlets.

Social Media

Facebook and/or Twitter can offer another platform for project updates or to alert stakeholders of upcoming events and meetings. Because the timeframe of this project does not allow for the development of a significant following on Facebook or Twitter, the use of existing municipal and community-led accounts is proposed. HW can coordinate with administrators by providing content for postings.

One-on-One Interviews

The target audience for one-on-one interviews would include town officials and staff, as well as developers, residents, regional planners, and conservation professionals. The goals of public

sector interviews would be to obtain and verify conservation/recreation information, discuss the details of property restrictions, and understand current recreation programming/needs.

Focus Groups

Focus groups are extensions of one-on-one meetings. They will generally consist of six- to ten-person group meetings with a targeted audience that represents a particular sector or interest group in Arlington. Individuals with expertise in legacy properties, habitat valuation, or watershed issues are examples of potential focus groups. Additionally, youth typically do not participate in public engagement events, but are a significant user of open space and recreational resources. They can also be another target for a focus group. These groups can be an opportunity to reach residents in environmental justice communities who might not typically participate in larger public events.

Local Board Updates

Plans like the OSRP potentially affect many local boards and committees. The plan potentially sets policies for the Conservation Commission, the Recreation Department, Public Works, Disabilities Commissions, the Select Board, and many other bodies. Further, the success of the plan hinges on whether the seven-year Action Plan is carried out by numerous local boards specifically identified in the plan. HW finds that regularly updating boards on the progress of the plan and engaging them in what they feel they can contribute to meeting goals and objectives, can ensure that these agencies are supportive of the final product.

Project Website

HW regularly creates basic but effective project websites that can be used for project awareness and can provide services for document sharing as products develop. Websites can also be used to host a “public event,” such as an online open house. Pre-scripted presentations and videos can be an alternative to reading text and add creativity. Diverse interactive features can be developed to share ideas and collect public feedback, including web surveys, discussed below.

1.3. Community Survey

Web surveys are low cost and easy to deploy, compile, and analyze. Target audiences for web surveys could include environmental groups, regional partners, and Town residents. HW regularly deploys tools from developers like SurveyMonkey® to create efficient, user friendly surveys that are equipped to produce reports at any point in the project schedule. Because these surveys are generally available to a broad audience, web surveys are well-suited to identifying topics of high interest and collecting ideas.

As part of the public engagement process, HW will distribute a community survey to understand experiences at Arlington’s open space areas and recreation facilities and community needs. Past surveys (e.g., Envision Arlington) can be used as a starting point to see if opinions and preferences have changed. The survey will be developed with input from the Open Space Committee and distributed through local networks such as the Recreation Department, schools, Senior Center, local Friends groups, Land Trust, and other stakeholders.

1.4. Public Workshops

Public workshops and other types of larger public events provide the Town with an opportunity to bring residents together to talk about local issues and understand the broader views of the community. They can be designed to work out ideas for future development or solicit feedback on proposed strategies and recommendations. In our experience with public workshops, interactive exercises and breakout groups encourage greater input by attendees, particularly from those who may not feel comfortable talking in front of a large group. A less formal option is the community open house, which can offer flexible drop-in periods for one-on-one engagement. The Open Space Committee may want to consider an open house as one of their larger public events.

Currently restrictions on public gatherings are still in place. As we move into 2021, these restrictions may lessen, however, the public may be somewhat apprehensive in attending larger public events. As a result, virtual engagement may continue to be the norm, and the Town should assume planning for a virtual platform to replace and/or support any in-person events throughout the update process. HW uses several online platforms such as Zoom, GoToWebinar, and Webex. Each has pros and cons, depending on the objective of the meeting and the level of participation from attendees. Facilitation can require a few staff members to manage the technical aspects of the online platform, acting as emcee, and monitoring participants for security purposes, but also to maximize attendee participation. Some platforms allow for “breakout rooms” and can mimic in-person small group discussions. Equitable access and participation are critical, and we will work with the Town to ensure that we are reaching all residents, providing access to those who want to participate.

HW will work with the Staff Open Space Committee and Town to determine the best approach to have meaningful engagement at each of these public events. Promotion should target as many residents, organizations, and interest groups as possible and we will discuss how best to promote these events to attract as many attendees as possible. HW will provide materials required to facilitate productive events including, but not limited to, posters and maps, PowerPoint presentations, and handouts. We will also help in developing graphics for promotional pieces like flyers, posters, and postcards.

First public workshop/event

The objectives of the first workshop will be to introduce the public to the process, understand how and if open space and recreation needs are being met today, and determine future needs. Small group discussions can focus on variations of three primary questions: What are we doing well? What could we do better? and What more can we do?

Second public workshop/event:

For the second workshop, HW’s primary objective is to present the goals and objectives along with the draft seven-year action plan to the public. At this point, the Open Space Committee will be comfortable with a complete draft of the action plan and ask if we “got it right,” what

changes need to be made, and what's missing. The discussion in these meetings generally revolves around prioritizing and the use of interactive exercises like keypad polling, dot voting, etc. An open house format (virtual or in-person) is ideal to allow people the opportunity to review in more detail each action and have a one-on-one conversation to ask questions.

Task 1 Deliverables

- Five project meetings (total) with the Open Space Committee.
- Development of a public engagement strategy.
- Ongoing outreach through one-on-one interviews, focus group meetings, and working group meetings as identified in the public engagement strategies.
- One community survey including summary of findings.
- Two public forums including all supporting staff, materials, and presentations.
- Written documentation of all public discussions and work sessions.

Task 2: Review of Existing Information/Plans

HW planners will review past reports, with particular attention to more recent documents, to assess the availability of data and information important to this process. While the many recent plans of Arlington will certainly provide much of the information and data HW needs to develop the OSRP, there may be gaps. Upon completion of our review, HW will develop an information needs plan. This plan will be organized as a matrix describing the information needed to update the baseline information and identifying the likely source of that information. This matrix will then be organized by different sources (e.g., Conservation Commission, Parks and Recreation, DPW, etc.) and disseminated to the appropriate individuals. HW staff will develop a “follow through” procedure to ensure that all information is gathered in the most efficient way possible. The information needs plan will be vetted with the Steering Committee and municipal staff to determine if there are items that need to be added and the most likely source of the information. Once the information needs plan (matrix) is complete, as described above, HW will begin our “fact finding” efforts with various data sources, municipal departments, or key stakeholders.

Equally important will be the integration of relevant recommendations from these recent planning efforts by the Town into the OSRP update, including the Municipal Vulnerability Preparedness (MVP) Program Planning Report, Hazard Mitigation Plan, Arlington’s Master Plan, and ADA Self Evaluation, among other reports and studies completed and in progress. HW will work with the Open Space Committee on how best to reference and include relevant goals and strategies that are important for protecting, maintaining, and enhancing the benefits of open space and recreation resources.

Task 2 Deliverables

- Annotated bibliography of all relevant documents.
- Information Needs Plan for the project.
- Identification of goals, objectives, strategies, and recommendations of relevant documents that support the OSRP.

Task 3: Mapping

HW will develop each of the maps required for the plan in accordance with DCS guidelines. These include:

1. Community Setting
2. Environmental Justice Communities
3. Zoning
4. Soils and Geological Features
5. Unique Features
6. Water Resources
7. Open Space and Recreation Resources
8. Action Plan

The Town has two additional maps in its current OSRP (2015-2022). HW will create two additional maps as part of this budgeted item, as needed, for a total of 10 maps.

Task 4: Plan Development

Using the guidelines prepared by Massachusetts Executive Office of Energy and Environmental Affairs (EEA) – Division of Conservation Services (DCS), HW will draft the OSRP. It will be prepared in separate parts as follows:

4.1. Sections 2 through 5

Sections 2 through 5 focus on data, mapping, and inventories—providing the backdrop and context for the plan. Data sources HW will mine include U.S. Census and American Community Survey (ACS) data, state and regional data, historical information, environmental resource information, and other data necessary to update the OSRP to meet the DCS requirements. HW will be able to update information from readily available public sources (e.g., U.S. Census, ACS, MassGIS, Metropolitan Area Planning Council (MAPC), etc.). The Open Space Committee and Town will be responsible for providing the historical and environmental updates that are rooted in local knowledge. Where local data are required related to building permits and similar items, HW will need to rely on local agents to provide that information. As noted in Task 2, HW will also review the Town's planning documents noted in its RFQ as well as other ongoing planning efforts to meet some of the data need requirements. HW will also interview any key stakeholders identified by the Open Space Committee where these interviews can enhance the local knowledge required for these sections of the plan.

During the update, the Open Space Committee and Town will need to play an active role in completing the inventory of conservation and recreation lands with HW, particularly updating new lands acquired and their level of protection, use, and access by the public. The Open Space Committee will also identify parcels of land considered to be a priority for protection (lands of conservation and recreation interest). HW will assist the Open Space Committee in articulating the benefits and rationales for the acquisition and protection of these lands.

4.2. Sections 6 to 9

Sections 6 to 8 focus on the community vision, recreation, and open space needs, and the OSRP goals and objectives. At this point in the plan development process, the Open Space Committee will have provided HW with feedback on Sections 2 to 5. The first public workshop and community survey will have been completed, which focuses on community needs. Additionally, HW will have interviewed a variety of stakeholders and reviewed municipal and regional plans that discuss conservation and recreation needs in the community. Using all this input, Sections 6 to 8 will be updated. Draft material will be distributed to the Open Space Committee and various municipal departments for feedback.

The final step in this task is crafting the Action Plan (Section 9). Based on input from all prior work, HW will work with the Open Space Committee to develop achievable action items within the seven-year timeframe. The review of the current plan's Action Plan (Open Space Committee Meeting #1) will start as a base, building on actions that were not completed but still deemed relevant. New action items will be discussed with an eye toward partnerships with local and regional organizations. With limited resources, leveraging resources can help the Town meet common goals and objectives with these groups. The Open Space Committee may also want to think longer-term (beyond seven years) and talk through what could be done now to reach these future objectives. A key component to Section 9 is the Action Plan Map. HW will work with Town staff in the development of this map to ensure that it is visually appealing, well organized, and highlights the goals and objectives of the OSRP. It can be a marketing piece to the public illustrating what the Town will be doing in the next seven years.

4.3. Assembling the Open Space and Recreation Plan

The remaining sections of the plan will be incorporated after the Open Space Committee is satisfied with Sections 2 to 9. These include *Section 1 – Plan Summary* and *Section 11 – References*. Appendices will be prepared as appropriate. HW will assist in the circulation for local review, soliciting comments from the Arlington Select Board, Planning Board, Conservation Commission, and MAPC (*Section 10 – Public Comments*). Any comments received will be reviewed by the Open Space Committee and incorporated into the OSRP.

4.4. Plan Approval

HW will submit the draft OSRP to DCS for review. Any comments received by DCS will be reviewed with the Open Space Committee and addressed to prepare the final OSRP. As final deliverable, HW will prepare 25 color, bound copies of the updated plan to the Town with an electronic copy (MSWord document).

Task 4 Deliverables

- Drafts, review, and final drafts of all sections of the OSRP, delivered in phases as described above.
- Support letters
- Final cohesive draft of the OSRP.
- Final, full illustrated document in the following formats:
 - 25 color, bound hardcopies
 - Complete PDF
 - MSWord document file
 - All supporting files (e.g., Excel)

Assumptions for Proposed Scope of Work

HW makes the following assumptions for this scope of work:

- Any mailing or advertising associated with the project will be conducted and paid for by the Town.
- The Town will provide HW with updated town GIS files (e.g., parcels, buildings, zoning, right-of-ways, etc.), if available, as well as an updated assessor's database to determine land ownership and prepare the required maps as needed to provide support.
- HW will not need to make significant amendments or repairs to either the Town's GIS (e.g. line work, etc.) or Assessor's data. Where such amendments are needed, HW will help to organize the efforts of the Town to make said amendments.
- The Town will provide all data required to complete the updated inventory of conservation and recreation lands. This will include a review and update of anecdotal information that may be included in the current background sections of the OSRP.
- Town officials will provide HW with any required research of town-owned properties to confirm ownership, deed restrictions, methods of purchase, etc.
- The Town will coordinate scheduling and logistics of Open Space Committee meetings and public workshops.
- HW will use 2019 ADA Evaluation and Transition Plan to satisfy DCS requirements.

E. Staffing Plan

Key Personnel

The following key personnel will be assigned to this project as its core team. The respective roles of each individual are provided along with a brief bio. More detailed resumes are attached to this proposal. Support staff include staff planners, graphic designers, and GIS technicians.



Nathan Kelly, AICP – HW Principal in Charge

Role: Principal-in-Charge; responsible for ultimate project oversight and Quality Assurance/Quality Control; also responsible for assisting with the design of public process, meeting facilitation, and technical support for the 7-year action plan.

Nate has successfully managed projects for 20 years at HW, providing professional planning and zoning services to more than 50 New England municipalities. Nate's work has ranged from comprehensive zoning revision projects to developing affordable housing, open space, land preservation, and neighborhood revitalization studies. Many of his projects require extensive public outreach in the form of charrettes, public workshops, or public hearings. Nate was one of the primary authors of the Massachusetts Smart Growth/Smart Energy Toolkit, the Rhode Island Low Impact Development Site Planning and Design Guidance Manual, and over a dozen neighborhood/comprehensive plans in Southern New England. He recently served as the President of the Rhode Island Chapter of the American Planning Association. Nate has played the role of Project Manager or Principal-in-Charge for all of HW's Open Space and Recreation Plan projects.



Krista Moravec, AICP – Project Manager

Role: Project Manager; responsible for ensuring that project expectations are met, including project timelines and high quality deliverables; plan development and public outreach.

Krista has managed and provided technical support for dozens of community-based projects nearly 20 years. HW often relies on Krista, a truly interdisciplinary professional, to lead the development of land use concepts based on the typical elements of a master plan (e.g., housing, transportation, economic development, etc.). At the community level, Krista is particularly skilled at developing outreach strategies that weave together diverse perspectives in a way that adds depth and credibility to local plans. In addition to her community-based work, Krista is one of HW's primary project managers for US EPA contracts related to water quality and infrastructure training. In Massachusetts, Krista worked with the Towns of Billerica, Bourne, Burlington, Marshfield, Stoughton, and Weymouth in updating their OSRPs. She is currently assisting the towns of Brewster and Reading through this process.



Craig Pereira, ASFPM – Project Planner

Role: Project Planner; responsible for assisting in data collection, plan development, and public outreach.

Craig is one of HW's leading community planning consultants and has worked locally with dozens of community-based organizations on efforts related to public health, hazard mitigation, and climate adaptation. Because of these skills, and his certification by the Association of State Flood Plain Managers, Craig will play an integral role in addressing many of the technical issues related to coastal resiliency. His work on

projects like Healthy Places by Design; the Bristol, RI Health Equity Zone; numerous Hazard Mitigation Plans; and several Community Master Plans has created a decade of experience that will be of tremendous use to Arlington. Craig recently helped Oak Bluffs perform an inventory and conditions assessment of its recreation and open space areas. He also assisted with OSRP updates in Stoughton and Dedham.

F. Similar Projects

The following table provides a summary of our OSRP projects and, where available, reference contact information.

OSRP Projects – Approved and Ongoing

Town	Status	Contact
Stoughton	DCS Approved 2018	Ardis Johnston Stoughton Staff Open Space Committee (617) 495-2472
Available at https://www.stoughton.org/sites/stoughtonma/files/uploads/180119_stoughtonosrp_final.pdf		
Bourne	DCS Approved 2018	Barry Johnson Bourne Staff Open Space Committee (508) 759-0600 x1505 bjohnson@townofbourne.com
Available at https://www.townofbourne.com/sites/g/files/vyhlf316/f/uploads/180208_bourne_final_osrp.pdf		
Marshfield	DCS Approved 2018	Karen O'Donnell Staff Open Space Committee Chair (781) 837-8727 Knodonnell55@gmail.com
Available at https://www.marshfield-ma.gov/sites/marshfieldma/files/uploads/180330_marshfielddsrp_final_wappendices_reduced.pdf		
Burlington	DCS Approved 2019	John Keeley Conservation Administrator 781-270-1655
Available at http://www.burlington.org/190627_BurlingtonOSRP.pdf		
Weymouth	DCS Approved 2020	Robert Luongo Director, Planning and Community Development 781-340-5015
Currently not available online Available at: https://www.weymouth.ma.us/mayor/news/state-approves-weymouth%E2%80%99s-open-space-and-recreation-plan-update		
Brewster	Draft submitted to DCS	Elizabeth Taylor Brewster Staff Open Space Committee 508-896-3701 x 1149
Reading	In progress	Charles Tirone Conservation Administrator 781-942-6616

G. Proposed Schedule

	2020												2021					
TASKS	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
1. Public Outreach and Meetings																		
1.1 OS Committee Meetings	M		M			M				M		M						
1.2 Ongoing Public Engagement																		
1.3 Community Survey																		
1.4 Public Workshops						P					P							
2. Review of Existing Plans																		
3. Mapping																		
4. Plan Development																		
4.1 Sections 2-5																		
4.2 Section 6-9																		
4.3 Assembling the Plan																		
4.4 Plan Approval																		

M – Meeting with Open Space Committee

P – Public Workshop/Larger Public Event

ATTACHMENTS

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Resumes





Nathan Kelly AICP, NCI

Principal Planner
nkelly@horsleywitten.com
401-272-1717

Areas of Expertise

Comprehensive Planning
Low Impact Development
Downtown & Neighborhood
Revitalization
Watershed Planning & Assessment
Regulatory Reform

Professional Registrations & Affiliations

AICP
National Charrette Institute (NCI)
Charrette System™ and Charrette
Management and Facilitation™ Training
Certification
APA, MA Chapter
APA, RI Chapter
APA, CT Chapter

Academic Background

Masters of Arts,
Urban and Environmental Policy and
Planning, Tufts University
Graduate courses in Applied Watershed
Management, Negotiation and Conflict
Resolution, Land Use Management,
Urban Planning, and Environmental Law
Bachelor of Arts, Philosophy and English,
Boston College

Professional Experience

Horsley Witten Group, Inc.,
Principal Planner, 2000 to present

Horsley Witten Group

Sustainable Environmental Solutions



Nathan Kelly is an Associate Principal with HW and directs the firm's Providence, Rhode Island office. Nate has over 20 years of project management experience, and has provided professional planning, zoning, and facilitation services to more than 50 New England municipalities. Nate is the Immediate-Past-President of the Rhode Island Chapter of the American Planning Association and serves on Grow Smart Rhode Island's Land Use Training Collaborative. He received his Masters Degree in Urban and Environmental Policy from Tufts University and currently resides in Providence, RI.

KEY PROJECTS

Community Master Plans: Managed the development of Community Master Plans for over a dozen municipalities in Connecticut, Massachusetts, New Hampshire, and Rhode Island.

Comprehensive Zoning Reform: Led the development and adoption of comprehensive zoning and subdivision reform in Attleboro, Athol, Braintree, and Walpole, MA; Groton and Waterford, CT; and Jamestown and North Kingstown, RI.

Open Space and Recreation: Served as project manager or principal-in-charge for over a dozen open space and recreation plans/needs assessments for Massachusetts communities including, but not limited to, Billerica, Bourne, Scituate, and Yarmouth.

Pawtucket Downtown Design Plan: Provided technical expertise in the areas of civil engineering and zoning reform. Developed final language for the Zoning Ordinance that addresses revitalization opportunities for large mill structures, urban corridors, transitional zones, riverfront development, and historic preservation.

Middletown on the Move, City of Middletown, CT: Worked with the City to identify brownfield properties that may be appropriate for reuse as active recreation space. Organized public engagement activities for the project, including community interviews, site tours, open houses, public forums, on line surveys, and a project website and social media.

Smith Island Vision Plan, MD: Supported the Consensus Building Institute (CBI) in developing a Vision Plan for the island residents in the wake of Hurricane Sandy. Facilitated the process, and developed the final document.

Quonset Development Corporation Permitting and Development

Standards: Unified the separate Town Zoning Districts on QDC land into a single Quonset Zone and Developing complementary enforcement mechanisms between the Town and QDC Quonset Development Corporation Permitting and Development Standards. Updated all of QDC's performance standards for building design, site design, and utilities.

Rooftop Solar Bylaw & Policy Guidance: Worked with the Massachusetts Executive Office of Energy and Environmental Affairs (EEA) to develop a model local bylaw and accompanying guidance document for use by Massachusetts municipalities to regulate the development of small-scale solar energy systems.



Commonwealth of Massachusetts Smart Growth/ Smart Energy Toolkit: The Executive Office of Energy and Environmental Affairs developed a Smart Growth/Smart Energy Toolkit as an interactive CD-ROM training manual. Served as one of the lead planning consultants for this effort and authored the material for many of the Smart Growth techniques that were examined in detail.

Rhode Island Community LID Site Planning and Design Guidance: Served as the project manager for the development of a local guidance manual that will serve as a companion to the upcoming revision to the Rhode Island state stormwater standards. The manual will provide a variety of techniques that can be used at the local level to promote better site design and compact development.

Healthy Places by Design, Pawtucket and North Kingstown, Rhode Island: Lead consultant to both the City of Pawtucket and Town of North Kingstown on a Rhode Island Department of Health pilot initiative, which seeks to strengthen land use, transportation and urban design policies and local ordinances that guide the decision making process for the built environment to be more supportive of health, particularly as it relates to physical activity and healthy eating.

West Kingston, Peace Dale, Wakefield, and Matunuck Village Plans, South Kingstown, RI: Developed four village plans as part of two separately funded projects. Each village plan assessed the unique opportunities and challenges related to housing, economic development, infrastructure, zoning, and environmental issues. Intensive public engagement was used to generate an action plan for each village and the individual plans were incorporated into the Town's larger Comprehensive Plan.

Inclusionary Zoning Guidance, Department of Administration, State of Rhode Island: Developed definitive guidance manual for municipalities to effectively implement inclusionary zoning. The manual focused on suburban and rural communities that would expect incremental development through small subdivisions.



Krista D. Moravec, AICP

Senior Planner

kmoravec@horsleywitten.com

401-272-1717

Areas of Expertise

Comprehensive/Master Plans
Neighborhood/Corridor Planning
Open Space and Recreation Planning
Public Participation Programs

Professional Registrations & Affiliations

Certified Municipal Vulnerability Preparedness Provider
AICP
APA, RI Chapter Board, SNEAPA
Chapter Representative
National Charrette Institute (NCI)
Charrette System™ and Charrette Management and Facilitation™ Training Certification

Academic Background

Master of Community Planning,
University of Rhode Island
Bachelor of Arts, Marine Affairs,
University of Rhode Island

Professional Experience

Horsley Witten Group, Inc.,
Senior Planner, 2011 to Present
Maguire Group, Inc.,
Principal Planner, 2001 to 2011

Horsley Witten Group

Sustainable Environmental Solutions



Krista Moravec has been a practicing professional planner for nearly 20 years. She has worked on a variety of planning and engineering projects for both public and private sector clients. Her experience focuses on the interconnectedness of economic, social, and environmental issues. She takes a comprehensive approach to neighborhood, municipal, regional, and statewide planning to find equitable approaches that meet these challenges. Much of Krista's work requires public input. She works with her clients to develop creative and inclusive outreach programs that can effectively engage all members of a community.

KEY PROJECTS

Shrewsbury Municipal Vulnerability Preparedness – Shrewsbury, MA:

Project Planner assisted with the completion of a vulnerability assessment and development of an action-oriented resiliency plan for the Town of Sudbury. Worked with a Core Team to develop stakeholder's list, workshop approach, materials and presentation. Facilitated Two half day sessions of working groups utilizing the Community Resilience Building framework.

Sudbury Municipal Vulnerability Preparedness and Multi-Hazard Mitigation Plan Update – Sudbury, MA (current):

Project Planner assisted with the completion of a vulnerability assessment and development of an action-oriented resiliency plan for the Town of Sudbury. Worked with a Core Team to develop stakeholder's list, workshop approach, materials and presentation. Facilitated one full day session of working groups utilizing the Community Resilience Building framework.

Master Plan Update, Sudbury, MA: Manages the update of the Town's 2001 Master Plan. An appointed Master Plan Steering Committee, made up of representatives from local boards and committees as well as residents, guides the process. This point of the project focuses on data collection, interviews, and information review to analyze existing conditions and trends over the past 20 years. In addition to facilitating Steering Committee monthly meetings, Krista's current tasks include overseeing the development of a Baseline Report and a diverse public outreach process.

Master Plan Update, Canton, MA: Manages the update of Canton's 2004 Master Plan. To lead the process, the Town assembled a Canton Master Plan Steering Committee with representation of town boards and committees as well as residents. A draft of the Master Plan is currently being vetted by the community and municipal departments. It is organized around how people experience Canton – Live, Work, Play, Protect, Connect, and Adapt, and highlights three unique areas of Town that could benefit from more focused efforts for a variety of reasons. Krista oversees the drafting of the Master Plan, the public outreach process, and communication with the Town.

Master Plan Update, Stratham, NH: Manages the update of the Town's 1998 Master Plan. Essentially starting from scratch, the Stratham Master Plan Steering Committee leads the charge to develop a master plan that expresses the Town's dedication to its agricultural past while planning for its future. Tackling issues around an aging population, increasing housing costs, a changing business model for farms, and the anticipated loss of critical businesses like Lindt Chocolate, Stratham's Master Plan articulates actions that protect its heritage, diversify its housing, and build walking and biking connections, all in a rural landscape. Krista facilitated Steering Committee meetings, designed public outreach events, and wrote the Baseline Report, among other tasks as Project Manager.



Norton Village Center Vision Plan, Norton, MA: Managed the development of a vision plan for the Norton Village Center. Library Square in Norton, MA, is considered by some residents as “downtown” Norton, but the town has never really had a traditional New England town center. Library Square has all the elements, a town common, civic uses, Eaton College, and designation as a historic district. But it is plagued by traffic, an unsafe walking and biking environment, and no cohesive vision to make the area a true village center. Krista oversaw the creation of a vision plan that involved a stakeholder group that met monthly and extensive public outreach efforts.

Sustainable Jamestown, Jamestown, RI: Managed the Sustainable Jamestown project, which used extensive public engagement to understand the environmental, social, and economic issues of the island community. Krista worked with the Planning Department and Planning Commission to organize public input and ideas to develop sustainable principles that can guide municipal actions and inspire residents and businesses to take action themselves. Priorities were protecting the island’s character, adapting to climate change and sea level rise, managing drinking water supply, rising housing costs, supporting local businesses year-round, and promoting ecotourism. Sustainable Jamestown lives online and provides the community with a platform to connect residents with government and each other on sustainability issues to maintain the current high quality of life on the island for generations.

Master Plan Update, Exeter, NH: Managed this update that overhauled the Town’s Master Plan. The process included an extensive public engagement program and an active Steering Committee. The updated plan presented traditional planning topics in a more readable and user-friendly way that will help town staff, boards, and committees make decisions that reflect the community’s vision. The plan also touched on future challenges, including sea level rise, water quality, and affordable housing. As project manager, Krista was involved in all aspects of the project.

Open Space and Recreation Plans; Billerica, Bourne, Burlington, Marshfield, Weymouth, and Stoughton, MA: Managed these updates of the towns’ Open Space and Recreation Plans. Krista was involved in all aspects of these projects. Revisions included updated mapping, demographics, and open space and recreational resources inventories. Engaged residents and stakeholders through a variety of approaches, including community surveys, focus groups, interviews, and public workshops. This input informed updates to open space and recreational needs as well as goals and objectives and was the basis for development of a seven-year action plan.

Plan of Conservation and Development (POCD) Update, Haddam, CT: Managed the Town as they update their local POCD. The update aims to create a plan that focuses on the places of Haddam and how they are connected through natural, built, and social networks. Public engagement included two public workshop events. Krista is involved in all aspects of the project.

Comprehensive Plan Update, Pawtucket, RI: Managed update of the City’s 2011 Comprehensive Plan. The update meets the new requirements of the Rhode Island Comprehensive Planning Standards Manual. The succinct, user-friendly plan highlights “creative placemaking” to drive downtown and riverfront redevelopment, overall business growth, and neighborhood revitalization. Krista was the lead writer for the updated plan.

Rhodemap RI: A Regional Plan for Sustainable Development, State of Rhode Island Division of Planning: Worked as part of a team that developed a regional plan for sustainable development for the State of Rhode Island, emphasizing the inter-dependent challenges of economic competitiveness and revitalization, social equity, and housing affordability as well as energy use, climate change, public health and environmental impact. Coordinated an extensive public input and outreach program, supported to project citizen advisory committees, and provided technical assistance to sub-consultants.

Master Plan Update, Shrewsbury, MA: Managed this update of the Town of Shrewsbury Master Plan. Working with a Steering Committee, the process included public forums and other methods of outreach to identify formative issues around land development, the local economy, municipal services, preservation and housing needs. The final update has a 20-year outlook for the Town and focused on goals, policies, and actions the Town will take to reach a shared vision. Krista participated in all aspects of the project.



Craig S. Pereira, CFM, NCI

Senior Planner

cpereira@horsleywitten.com

Areas of Expertise

Urban Design & Physical Planning
Municipal Planning & Community Outreach
Geographic Information Systems
Hazard Mitigation/Emergency Response Planning
Climate Change/Adaptation
Public Health
Landscape Architecture

Professional Registrations & Affiliations

Certified Municipal Vulnerability Preparedness Provider
Association of State Floodplain Managers, Certified Floodplain Manager (CFM)
National Charrette Institute (NCI)
Certified Charrette Planner
APA, RI Chapter
RI Flood Mitigation Association

Academic Background

Masters of Arts, Urban Design & Physical Planning, University of Rhode Island
Bachelor of Landscape Architecture, University of Rhode Island

Professional Experience

Horsley Witten Group, Inc.,
Senior Planner 2011 to Present
Pare Corporation,
Senior Planner 2004 - 2010

Horsley Witten Group

Sustainable Environmental Solutions



Craig Pereira has fifteen years of professional experience in community planning. His specific expertise is in municipal planning and community outreach, hazard mitigation and emergency response planning, climate change and adaptation planning and public health planning, assessment and implementation. He has presented at several regional workshops on the intersection of planning and public health and led a statewide training on Emergency Action Plans for both publicly and privately-owned dams. He also has experience working with federal clients (US EPA and Indian Health Services), geographic information system (GIS) mapping, analysis and modeling and a background in Landscape Architecture.

KEY PROJECTS

Mashpee Wampanoag Tribe Hazard Mitigation Plan Development –

Mashpee Wampanoag Tribe (current): Project Manager for the creation of the Tribe's first multi-hazard mitigation plan. Working with the Tribe's Emergency Management Director and Tribal Hazard Mitigation Committee, conducted a Risk and Vulnerability Assessment, created GIS mapping of high-hazard areas, developed a capability assessment and developed/prioritized mitigation actions towards improved resiliency. Also conducted Tribal interviews, Tribal workshops and coordinated with MEMA and FEMA officials.

Sudbury Municipal Vulnerability Preparedness and Multi-Hazard Mitigation Plan Update – Sudbury, MA (current):

Project Manager for the completion of a vulnerability assessment and development of an action-oriented resiliency plan for the Town of Sudbury. Worked with a Core Team to develop stakeholder's list, workshop approach, materials and presentation. Facilitated one full day session of working groups utilizing the Community Resilience Building framework. Also working with the Sudbury Local Hazard Mitigation Committee to develop the 5-year update for the Town's Multi-Hazard Mitigation Plan. Updated the Risk and Vulnerability Assessment, as well as GIS mapping of high-hazard areas. Developing mitigation actions for inclusion in the update, conducted municipal interviews, public workshops and coordinated with MEMA and FEMA officials.

RI Statewide Comprehensive Outdoor Recreation Plan Update, Statewide (current):

Project Planner for the outreach and public engagement component of the SCORP update. Conducted 11 focus groups across the state to identify demand, satisfaction, and gaps related to outdoor recreation. Coordinating with Working/Advisory Groups to develop vision and goals for the update. Managing online Survey 123 application to solicit the general public for comments and images.

Bristol's Health Equity Zone, Bristol, RI (current): Project Manager for CDC/HRSA-funded Rhode Island 4th-year statewide initiative to establish Collaborative of partners to more efficiently deliver services surrounding Food and Nutrition, Physical Activity, Mental Health and Wellness and Substance Abuse Awareness and Prevention. Conducted town-wide Baseline Assessment, developed annual Work Plan, and implemented initiatives throughout the community over the past 3 years.

Providence Hazard Mitigation Plan Update, Providence, RI: Project Manager for the 5-year update of the City's Hazard Mitigation Plan. Updating Risk/Vulnerability Assessment, GIS-mapping of high-hazard areas, and Higher Education/



Healthcare Cluster Annexes. Working with Local Hazard Mitigation Committee to develop, select and prioritize mitigation actions for inclusion in the Update and coordination with RIEMA and FEMA officials.

National Grid Easement Trail Feasibility Study, Bristol/Warren, RI: Project Manager for the development of a conceptual trail alignment along the Grid's utility easement through Warren and Bristol. Conducted Existing Conditions Analyses, GIS mapping, public workshops/stakeholder interviews, and coordinated with municipal officials to integrate multi-modal transportation alternatives with recreational land uses.

Shrewsbury Municipal Vulnerability Preparedness, Shrewsbury, MA: Project Manager for the completion of a vulnerability assessment and development of an action-oriented resiliency plan for the Town of Shrewsbury. Worked with a Core Team to develop stakeholder's list, workshop approach, materials and presentation. Facilitated two half day sessions of working groups utilizing the Community Resilience Building framework.

Easton Comprehensive Master Plan, Easton, MA: Project Planner for the update of Easton's Master Plan. Project included GIS data/mapping, demographic data updates and public input garnered through a range of outreach activities including public forums, surveys, feedback loops and the project website.

Marblehead Hazard Mitigation Plan Update – Town of Marblehead, Marblehead, MA: Project Manager for the 5-year update of the Town's Hazard Mitigation Plan. Updated the Risk and Vulnerability Assessment, as well as GIS-mapping of high-hazard areas. Worked with Local Hazard Mitigation Plan Implementation Committee to develop, select and prioritize mitigation actions for inclusion in the Update. Conducted municipal interviews, public workshops and coordinated with MEMA and FEMA officials.

Comprehensive Community Plan Update, South Kingstown, RI: Project Planner for the plan's five-year update. The project included a full update of community baseline information, GIS data/mapping, demographic data updates and public input garnered through a range of outreach activities.

Bristol Hazard Mitigation Plan Update, Bristol RI: Project Manager for the 5-year update of the Town's Hazard Mitigation Plan. Conducted Vulnerability Analyses for projected sea level rise on residential and commercial structures, and roadway infrastructure. Conducted municipal interviews, public workshops and coordinated with RIEMA and FEMA officials.

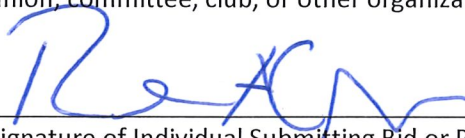
Emergency Action Plan Workshop, Lincoln, RI: Developed and co-facilitated a day-long workshop for the Rhode Island Department of Environmental Management and Rhode Island Emergency Management Agency focused on educating stakeholders in their role and responsibility in the development and maintenance of Emergency Action Plans for high/significant hazard dams.

Forms



CERTIFICATE OF NON-COLLUSION FORM
TOWN OF ARLINGTON
Open Space and Recreation Plan Update

The undersigned certifies under penalties of perjury that this bid or proposal has been made and submitted in good faith and without collusion or fraud with any other person. As used in this certification the word "person" shall mean any natural person, business, partnership, corporation, union, committee, club, or other organization, entity, or group of individuals.



Signature of Individual Submitting Bid or Proposal

Richard Claytor

Name of Individual Submitting Bid or Proposal

Horsley Witten Group, Inc.

Name of Business

October 26, 2020

Date

BY STATE LAW THIS NON-COLLUSION FORM MUST BE SIGNED AND SUBMITTED WITH THE BID OR PROPOSAL.

CERTIFICATE OF TAX COMPLIANCE FORM
TOWN OF ARLINGTON
Open Space and Recreation Plan Update

Pursuant to MGL Chapter 62C, Section 49A, I certify under the penalties of perjury that I have complied with all laws of the Commonwealth of Massachusetts relating to taxes, reporting of employees and contractors, and withholding and remitting child support.

04-2959513



Richard Claytor, President

Social Security Number or
Federal Identification Number

Signature and Title of Individual or
Responsible Corporate Officer

BY STATE LAW THIS CERTIFICATE OF TAX COMPLIANCE FORM MUST BE SIGNED AND SUBMITTED WITH THE BID OR PROPOSAL.

Arlington Housing Production Plan Community Engagement Plan

This Community Engagement Plan is an internal working document used by the consultant team, Advisory Committee (Housing Plan Implementation Committee/HPIC), and the Town of Arlington to guide public outreach and communications in coordination with major project milestones for the Housing Production Plan.

Key Project Information

Timeline	April 2021 to December 2021
Staff Contact	Jenny Raitt jraitt@arlington.ma.us 781-316-3091
Advisory Committee	Housing Plan Implementation Committee
Consultants	Barrett Planning Group LLC Judi Barrett; judi@barrettplanningllc.com Alexis Lanzillotta; alexis@barrettplanningllc.com Horsley Witten Group Nate Kelly; nkelly@horsleywitten.com Jeff Davis; jdavis@horsleywitten.com

Timeline of Community Engagement

ESTABLISHMENT OF ADVISORY COMMITTEE

Timeline: Complete

The Town will finalize the identification of the Housing Plan Implementation Committee (HPIC) as the de facto Advisory Committee, with the possibility of bringing on additional members if needed.

ADVISORY COMMITTEE MEETING #1

Timeline: May HPIC Meeting

During this first committee meeting, BPG/HW will:

- Discuss the HPIC's charge and individual roles;
- Provide a project timeline;
- Review Work Plan (to be given to HPIC in advance);

- Review question(s) for first virtual engagement opportunity; and
- Discuss focus groups and community forum

WEBPAGE UPDATE & ONLINE ENGAGEMENT OPPORTUNITY

Timeline: Prior to Press Release

The HPIC's webpage should serve as a clearinghouse for project updates so that there is one agreed-upon place to direct people with questions. To start, the page should include:

- A brief outline of the project, including primary contact information, list of HPIC members, consultant information, and a project timeline;
- A link to an online Q+A opportunity (e.g., Padlet) with question(s) for public response; and
- Save-the-Date information about first community meeting.

BPG will prepare a large poster to be displayed in designated areas (depending on what is open to the public) that will include a QR code taking people to the HPIC webpage. This should be displayed at minimum from when the page is ready for public eyes until the first community meeting.

PRESS RELEASE #1

Timeline: By May 12, 2021

The first press release will explain the project, share the webpage, and promote the first community meeting.

FOCUS GROUPS

Timeline: Invitations out by May 10, 2021; Focus Groups conducted prior to Community Meeting

BPG/HW will conduct virtual, by-invite focus groups and interviews over a two-day period. Participants will be given several times to choose from and receive questions in advance. BPG/HW will provide a summary of takeaways to Town staff and the HPIC within two weeks after the focus groups.

COMMUNITY MEETING #1

Timeline: June 2, 2021

Town staff will introduce the project, HPIC, and consultants to attendees, and then the consultants will present existing conditions (including the current HPP and work achieved to date), a description of an HPP, community demographics and housing profile in Arlington, and initial takeaways from focus groups and feedback from the online Q+A. The meeting will include ample opportunities for public input, including polls and breakout group discussions facilitated by the consultants and HPIC members comfortable with leading a group. Barrett Planning Group will prepare the presentation, a draft agenda, and a flyer or graphic for distribution. At minimum this should be used in social media posts, but can also be printed and distributed by HPIC members.



ADVISORY COMMITTEE MEETING #2

Timeline: July 1, 2021 (Scheduled HPIC Meeting)

During this meeting, BPG/HW will:

- Discuss feedback provided through focus groups, the online Q+A, and the first community meeting;
- Present preliminary Needs Assessment findings;
- Plan the second community meeting; and
- Review questions for online implementation survey (to be launched following second community meeting).

PRESS RELEASE #2/WEBPAGE UPDATE

Timeline: Two Weeks Prior to Community Meeting #2

The second press release will provide project updates, promote the second community meeting, and share information about the upcoming implementation survey. This will also serve as an update to the project/HPIC webpage.

MAJOR PROJECT MILESTONE

Draft Needs Assessment & Draft Goals Complete by August 6, 2021

Barrett Planning Group will provide the HPIC and Town Staff with a Comments Resolution Matrix to provide feedback on the Draft Needs Assessment.

COMMUNITY MEETING #2

Timeline: By August 20, 2021

The second community meeting allows BPG/HW to present the findings of the Needs Assessment and draft goals. Participants will be able to provide input and will also be given information about the online implementation survey. Barrett Planning Group will prepare the presentation, a draft agenda, and a flyer or graphic for distribution. At minimum this should be used in social media posts, but can also be printed and distributed by HPIC members.

ONLINE IMPLEMENTATION SURVEY

Timeline: Launched Following Community Meeting #2; Open for Two Weeks

This survey will outline each draft goal as well as strategies for consideration. Respondents will be asked to rank the strategies, and the findings of this survey will inform the draft implementation plan.

BPG will prepare a large poster to be displayed in designated areas (depending on what is open to public) that will include QR codes taking people to the survey and the project/HPIC webpage. This should be displayed at minimum from when the survey is ready until the third public meeting.

ADVISORY COMMITTEE MEETING #3

Timeline: HPIC September Meeting

During the final advisory committee meeting, HPIC members will discuss potential recommendations and provide suggestions for the final community meeting.

MAJOR PROJECT MILESTONE

Draft Strategies & Implementation Plan Complete by September 10, 2021

Barrett Planning Group will provide the HPIC and Town Staff with a Comments Resolution Matrix to provide feedback on the Draft Implementation Plan.

PRESS RELEASE #3/WEBPAGE UPDATE

Timeline: Two Weeks Prior to Community Meeting #3

The final press release will provide project updates and promote the final community meeting. This will also serve as an update to the project/HPIC webpage.

COMMUNITY MEETING #3

Timeline: By October 1, 2021

BPG/HW will present the draft implementation plan to the public, including an overview of the public input and that led to its development. Barrett Planning Group will prepare the presentation, a draft agenda, and a flyer or graphic for distribution. At minimum this should be used in social media posts, but can also be printed and distributed by HPIC members.

MAJOR PROJECT MILESTONE

Draft Housing Production Plan by October 15, 2021

Barrett Planning Group will provide Town Staff with a Draft Housing Production Plan to present to the Select Board and Arlington Redevelopment Board.

JOINT PRESENTATION TO SELECT BOARD & ARLINGTON REDEVELOPMENT BOARD

Timeline: By October 29, 2021

Barrett Planning Group will prepare the presentation and a draft agenda. Town staff will lead the presentation, with consultants available for questions.

Outreach

MEDIA OUTREACH

As outlined previously, Barrett Planning Group will draft three press releases (also to be posted to the project/HPIC webpage).

TARGETED COMMUNITY GROUPS, ORGANIZATIONS, AND TOWN DEPARTMENTS

Keeping a running list of community groups and organizations that should receive announcements about the HPP is critical. Organizations can be asked to distribute announcements to their members



or post on their website, online calendar, or social media presence. This list should include those that have physical or digital newsletters or email distribution lists. Identifying an HPIC member that will be the primary contact and reach out to the group / organization will ensure that everyone is contacted. Note that contact information (emails, phone numbers, etc.) is available in a separate file.

List of Targeted Community Groups, Organizations, and Town Departments

ArCS Cluster	Church of Our Savior
Arlington Boys and Girls Club	Drikung Meditation Center
Arlington Community Preservation Act Committee	East Arlington Livable Streets (EALS)
Arlington Council on Aging	East Arlington Merchant's Group
Arlington Department of Public Works	Envision Arlington
Arlington Disability Commission	Fenway Health / AIDS Action Committee
Arlington Diversity, Equity, and Inclusion	Fidelity House
Arlington Fire Department	First Baptist Church of Arlington
Arlington Health and Human Services	First Parish Unitarian Universalist Church of Arlington
Arlington Heights Neighborhood Action Plan Committee	Highrock Covenant Church
Arlington Housing Implementation Committee	Homelessness Task Force
Arlington Housing Authority & Property Managers	Housing Corporation of Arlington
Arlington Human Rights Commission	Institute for Human Centered Design
Arlington Inspectional Services	Mass Senior Action Council - Malden
Arlington Master Plan Implementation Committee	Metro North Workforce Board
Arlington Municipal Vulnerability Committee	Metropolitan Area Planning Council
Arlington Planning & Community Development	Park Avenue Congregational Church
Arlington Police Department	Respond, Inc.
Arlington Public Schools	St. Agnes Parish
Arlington Recreation Department	St. Athanasius the Great Greek Orthodox Church
Arlington Redevelopment Board (ARB)	St. Camillus
Arlington Residents for Responsible Redevelopment	St. John's Episcopal Church
Arlington Veteran Service Officer	St. Paul Evangelical Lutheran Church
Arlington Youth Counseling Center	Support Arlington Center
Boston Church of Christ	Support Arlington Heights
Calvary Church, United Methodist	Sustainable Arlington
Caritas Communities	Triangle Inc.
Chamber of Commerce	Trinity Baptist Church

Methods

During the first committee meeting, BPG/HW, Town staff, and the HPIC can determine which methods will work best for this engagement. In addition to the methods outlined above, other techniques worth exploring include:

Posters: Posters are generally 24x36 or 18x24 and typically require mounting on/ clipping to foam core and an easel for display at Town Hall, schools, libraries, and other locations. Barrett Planning Group can prepare and print these posters, but any printed visual materials would need to be delivered all at once and to one point of contact. As such, any posters would need to be prepared and approved at the outset of this process.

Email List: E-News can be distributed to individuals' emails collected during public input events or any other existing email lists the Town may have access to.

Email Signature: Town Staff and HPIC may consider adding brief "advertisements" to their email signatures, encouraging people to visit the project website or an upcoming public event (this would be attached to all outgoing e-mail messages).

"Arlington is updating its Housing Production Plan! Visit (HPIC webpage) to learn more!"

Town's Website: Post information/updates about the project on the Town's website and calendar of events page that directs people to the project website.

Social Media: Postings should come from the Town's Facebook page and Twitter account, and HPIC members should share directly from these posts to increase activity and visibility. A list of posts can be prepared ahead of time for continuous and consistent messaging.

Personal Announcements/Piggyback at Other Meetings: Town Staff and HPIC members frequently participate in other town meetings or community group events. Asking for an opportunity to make announcement about an upcoming event or public input opportunity can help spread the word to individuals that might not have heard otherwise.

Town Bulletin Boards/Alerts: Barrett Planning Group will be preparing flyers for the community meetings. These can be printed and displayed on bulletin boards around Town. During the first committee meeting, HPIC members and Town staff can sign up for distributing flyers for each of these events based on their community connections.

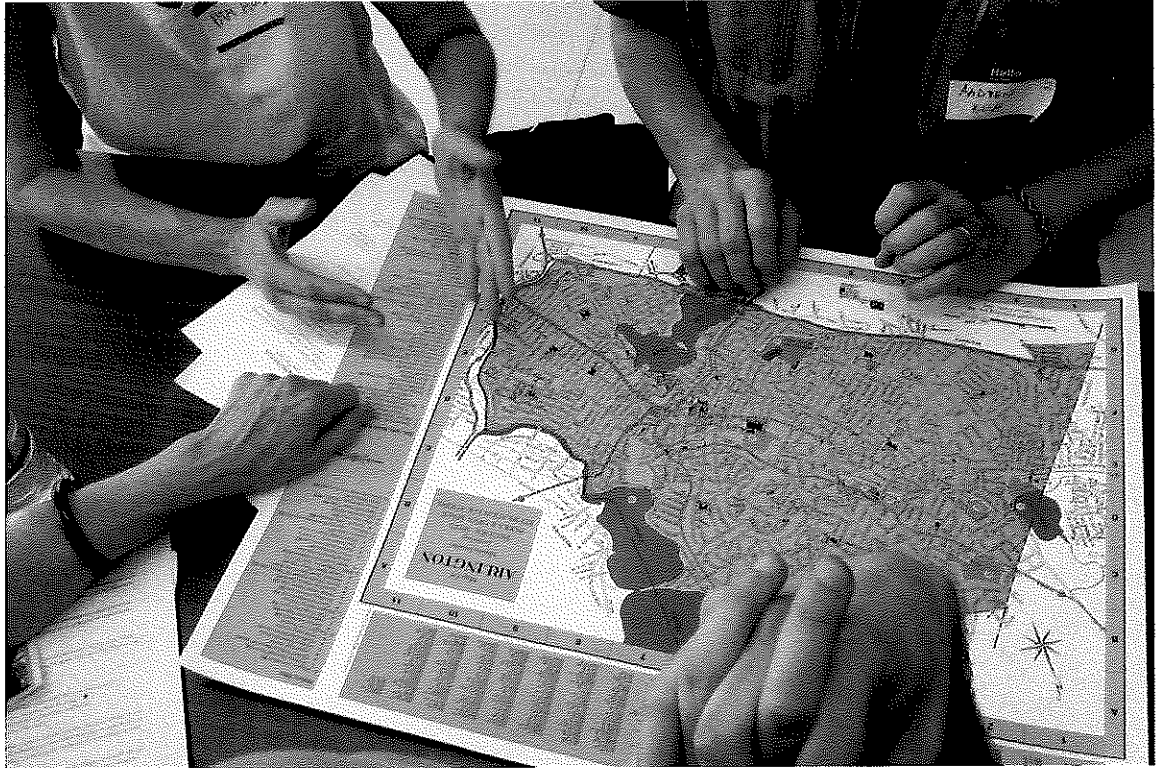


Messaging

To ensure that all Advisory Committee members are sharing the same message about the HPP and the update process, the following are primary talking points to use as an “elevator speech.” (*To be discussed and refined with HPIC.*)

- *Ensure your voice is heard!* An HPP is both data-driven and shaped by the community. Everyone is invited to participate through an open and transparent process.
- *The HPP provides guidance to Town staff, commissions, boards, and other groups on the continued progress toward the housing-related goals of the Town’s 2015 Master Plan and the 2016 HPP.* While there has been some progress toward these goals and recommendations (e.g., the establishment of an Affordable Housing Trust, zoning bylaw amendments to allow mixed-use and certain parking reductions, etc.), other zoning amendments relating to housing production were paused to allow for further public engagement. Contributing to this current effort will allow the Town to re-examine some of these previously identified strategies that have not yet been implemented and consider them with additional community input.
- *Having an approved HPP ensures that the Town’s Zoning Board of Appeals decisions on comprehensive permit applications will be deemed “consistent with local needs” under MGL Chapter 40B.* “Consistent with local needs” means the ZBA decision to deny a comprehensive permit for one or up to two years will be upheld by the Housing Appeals Committee.

Town of Arlington Housing Production Plan Update



Non-Price Proposal

Submitted To:
Town Manager's/Purchasing Office
Town Hall Annex, 2nd Floor
730 Massachusetts Avenue
Arlington, MA 02476

By:





Table of Contents

Overview	1
<i>Barrett Planning Group LLC</i>	1
<i>Horsley Witten Group</i>	2
Approach and Plan of Services	4
<i>Mobilization</i>	4
<i>Housing Needs Assessment</i>	4
<i>Housing Goals</i>	10
<i>Implementation Strategies (Action Plan)</i>	11
<i>Community Engagement Assumptions</i>	12
<i>Thoughts on Virtual Engagement</i>	13
<i>Deliverables</i>	13
<i>Town Assistance</i>	14
Project Schedule	15
Relevant Experience	16
References	17
<i>Barrett Planning Group (Lead Consultant)</i>	17
<i>Horsley Witten Group</i>	17
Resumes and Proposal Certifications	19

OVERVIEW

Barrett Planning Group LLC is pleased to submit this proposal to assist the Town of Arlington with a Housing Production Plan Update. For this engagement, we have assembled an experienced team with an established track record as partners in planning and community development: Barrett Planning Group and Horsley Witten Group. Given the scope of work outlined in the Town's Request for Proposals (RFP), we believe our team is ideally qualified to serve you. We offer many competitive strengths:

- Recognized expertise in housing needs analysis, strategic planning, and real estate economics for affordable and market-rate housing;
- Thoughtful, talented community engagement team with a multidisciplinary perspective;
- Extensive experience both regionally and nationally in inclusionary zoning and analysis of regulatory barriers to affordable housing development;
- Over three decades of experience in local government planning and policy analysis;
- High comfort level working with professional staff, boards and commissions, the general public, and developers;
- Extraordinary depth of knowledge and work experience in Boston Metro Area cities and towns; and
- A talented team of planners with top-notch skills in demographic studies and spatial analysis with GIS technology.

BARRETT PLANNING GROUP LLC

Barrett Planning Group is a planning and community development firm specializing in comprehensive planning, zoning, affordable and fair housing policy, and development impact analysis. We are a certified woman-owned business by the State Office of Supplier Diversity. The firm is led by **Judi Barrett**, planning and community development professional with 33 years of experience in state and local government and the private sector, mainly in New England. Judi will serve as principal-in-charge. She has managed numerous municipal master plan engagements and prepared neighborhood revitalization plans, zoning ordinances and bylaws, and housing plans. Judi is known nationally for her work in inclusionary zoning. She is highly respected for her work in socioeconomic impact analysis as well. As a consultant for almost 20 years with the Massachusetts Housing Partnership (MHP) Chapter 40B Technical Assistance Program, Judi has worked with Boards of Appeal throughout the state. She is the principal author of MHP's *Chapter 40B Handbook for Zoning Boards of Appeal* (2017).

Judi previously served as Director of Municipal Services for RKG Associates, Inc.; Planning Director at Community Opportunities Group, Inc.; CDBG Program Director at the Massachusetts Department of Housing and Community Development (DHCD); and Community Development Director for the



Town of Plymouth, MA. A frequent panelist at APA and other professional conferences, Judi also serves as a trainer for the Massachusetts Citizen Planner Training Collaborative (CPTC) and other organizations. She chairs the Housing and Community Development Committee of the American Planning Association's Massachusetts Chapter and serves on the Housing and Economic Development Product Council of the Urban Land Institute, New England.

Alexis Lanzillotta, Project Manager, will coordinate the consulting team's work in Arlington. Alexis has led community engagement projects for Barrett Planning Group in Brewster, Quincy, and Bridgewater, and is currently co-leading our engagement work for Pioneer Valley Planning Commission (PVPC) on two master plans in Western Massachusetts. When the Citizen Planner Training Collaborative (CPTC) engaged us in March 2019 to update and revise all thirteen core courses offered by CPTC each year, Alexis served as principal researcher, author, and curriculum designer, and coordinated our work with the client. Alexis is also the firm's team leader for graphic communications, using Adobe Illustrator and other tools to provide polished graphics for community events, public meetings and hearings, and final reports. Alexis earned her undergraduate degree at Tufts University and a Master of Education from Fitchburg State University.

Other Barrett Planning Group staff will participate in this project as well, as indicated in our plan of services.

HORSLEY WITTEN GROUP

Horsley Witten (HW) Group is a small, full-service planning, design, and engineering firm based in Sandwich, Massachusetts, with satellite offices in Boston, Providence, and Exeter, NH. The firm was incorporated in 1988 and consists of a professional staff of over 50 land use planners, engineers, scientists, graphics designers, and landscape architects. **Nathan Kelly**, AICP, Principal, and **Jeff Davis**, AICP, Project Manager will represent Horsley Witten Group for the Arlington Housing Production Plan.

Nate Kelly has 20 years of professional experience and is well known throughout New England as an expert in sustainability, natural resource protection, and planning and zoning. As one of the main authors of the Massachusetts Smart Growth/Smart Energy Toolkit, Nate has led planning and zoning engagements for more than 50 New England cities and towns. He provides training and technical assistance to municipal planners in a wide range of interest areas, e.g., regulating design, parking strategies, food systems planning, zoning for renewable energy, and effective community engagement. Nate is certified in the National Charrette Institute (NCI) Charrette System™ and Charrette Management and Facilitation™ Certificate Training. Nate Kelly has extensive experience with affordable housing site analysis and feasibility studies, public meeting facilitation, and strategy implementation for housing and community development.

Jeff Davis, AICP is a professional planner of over 13 years, first in the greater Washington, DC area, and then in New England for the past seven years. He joined Horsley Witten as Principal Planner in



Proposal for Housing Production Plan: Town of Arlington

December 2015. Prior to that, he served as a Principal Planner for Land Use at the Rhode Island Statewide Planning Program from February 2012 and at Rhode Island Housing from February 2010. He has worked on a variety of planning and community development projects, and is currently working on planning and zoning projects for public-sector clients. His experience underscores the interrelation of land use, housing, economic development, and social issues in the creation of community assessments, neighborhood plans, comprehensive/master plans and other local, regional and statewide community planning efforts. Much of Jeff's work requires meaningful public input and community engagement. He has a long track record of assisting communities and organizations to develop and implement community engagement strategies that strengthen plans.

Barrett Planning Group and Horsley Witten Group have worked together on master plans for Hingham, Easton, and Shrewsbury, MA, and a housing plan for Hanson, MA.



APPROACH AND PLAN OF SERVICES

Our work plan is based on the tasks outlined below. Nevertheless, if selected for this engagement, we would be pleased to negotiate work plan adjustments at the Town's request. A chart outlining the following tasks and identifying the primary team member(s) responsible for each task can be found at the end of this section.

MOBILIZATION

Our team will participate in a kickoff meeting with Town staff and, if as appropriate, members of the Housing Plan Implementation Committee, the newly-formed Arlington Affordable Housing Trust, Arlington Redevelopment Board (ARB), or other Town boards or commissions that may be assembled to serve as an advisory committee. The kickoff meeting will provide an opportunity to make any necessary adjustments in the plan of services, finalize the public participation plan, and determine the best approaches to civic engagement in Arlington, and obtain data or documentation that is not readily available on the Town's website. As part of the mobilization process, we will conduct a tour of Arlington, either self-directed or with Town staff depending on the Town's preference and COVID gathering protocols in place at the time of the tour.

HOUSING NEEDS ASSESSMENT

To provide useful policy and programmatic recommendations, it is essential to understand the local and regional context for affordable housing in Arlington. The approach outlined below will promote that understanding, make good use of existing plans, studies, and databases owned by the Town, the regional planning agency, and complete a thorough Housing Needs Assessment as described in the Town's RFP.

- **Existing Plans.** We will review Arlington's 2015 Master Plan, 2016 Housing Production Plan (further discussed below), and other local plans and pertinent information from outside sources, and identify data needs to be addressed during development of the Housing Production Plan. Our team will verify the adequacy of available data for understanding and documenting historic trends and future projections, e.g., building permits and demolition permits, assessor's parcel data employment, business establishments, incomes, affordability, and other key variables from existing secondary sources.
- **Detailed Analysis of 2016 Housing Production Plan.** Arlington states in the RFP that meaningful progress has not been made to address the housing production goals laid out in its 2016 Housing Production Plan. As such, the Town would like to see an assessment of why implementation of the existing five-year plan was not achieved so that the new plan's goals can be approached through this lens of reflection. Through our research for this updated plan, in particular the individual and small-group interview process described below, we will analyze the existing plan's findings, goals, and implementation plan to determine what hindered its execution. Sometimes Housing Production Plans fall short of expectations because a community did not have the staff capacity or political wherewithal to reach legitimate, ostensibly achievable goals; sometimes the



implementation plan itself, however noble, overestimated what the city or town could do. In addition, having inadequate financial resources often explains why a plan or strategy fell short, so there needs to be either a commitment of new resources or a better alignment of the goals and action plan with the reality of a community's financial and political means.

In Arlington's case, there is also the enormous challenge of being (or being perceived as) a substantially built-out suburb, which means that however small, every change in the Town's built environment has many onlookers within the neighborhood and likely, many critics. Moreover, Arlington lies within the immediate orbit of the Cambridge housing market. The relentless pressure for a single-family home in this Greater Boston sub-market has accelerated price growth far ahead of what many expected even as recently as five years ago. The fact that Arlington has evolved as a single-family suburb complicates the housing conversation, too, and at least historically, there has been an uneven distribution of housing choices and some degree of class tension between East Arlington, Arlington Center and Arlington Heights. All of these and other factors make addressing local and regional housing needs challenging for policy makers, advocates, and investors..

- **Individual and Small-Group Interviews.** A housing needs assessment relies on access to good data, but there is no substitute for the information gathered through interviews with people who know the community and its housing problems. We will conduct a series of individual and small-group interviews on two or three days (depending on how they are scheduled) with a variety of people whose knowledge will be invaluable for updating Arlington's housing needs assessment. Examples of people to be interviewed include housing developers and property managers, residents of affordable housing and mixed-income developments, and representatives of the Arlington Housing Authority, Housing Corporation of Arlington, the Housing Plan Implementation Committee, Arlington Human Rights Commission, Arlington Public Schools, local/area banks (first-time homebuyer mortgage lenders and banks providing multifamily loans), Arlington Chamber of Commerce, social service organizations, faith-based community leaders, organizations serving low-income and minority clientele, and others. The initial interview process would be an ideal time for us to meet representatives of Arlington's neighborhood group, as well.
- **First Community Meeting.** In addition to providing the public with a general overview of the process for developing a Housing Production Plan, this first community meeting will invite participants to provide input about Arlington's housing needs, barriers to meeting these needs, the previous plan's goals, and more. Large-scale public engagement efforts early in the process can help to build the plan's credibility and broaden the conversation about housing needs across income levels, household types, and neighborhoods. It also offers a way to think about the Town's housing "report card," and engage residents in critical thinking about what people value in Arlington and whether the community's values are changing.
- **Local Housing Conditions and Market Assessment.** Our team will prepare an inventory of existing demographic, economic, and housing conditions and housing market trends, using



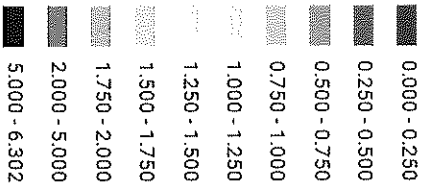
available data from the Planning and Community Development Department (e.g., pipeline projects and recent approvals), the Town Assessor, Arlington GIS, and proprietary (subscription) sources such as CoStar, Reonomy, and Rentometer. Findings from 2021 Metro Mayor's Coalition Regional Housing Taskforce and the Metropolitan Area Planning Council's (MAPC) MetroCommon 2050 will be analyzed and incorporated as they become available to ensure alignment with these regional efforts. Additionally, we also will look to well-tested sources such as the American Community Survey (ACS), unique data sets in Social Explorer, ESRI Business Analyst, HUD CHAS Data, and others for social, demographic, and economic data sets that can help to inform our interpretation of market activity. Arlington's involvement in the North Suburban HOME Consortium likely means that a fairly recent housing market assessment has been conducted. Relevant demographic, housing, and market trends will be reviewed, spatially analyzed, and mapped. A supply and demand analysis and gap analysis will be prepared. Arlington and other Greater Boston towns benefit from having access to many data sources that are not as well maintained or even available in other parts of the Commonwealth. In addition, Arlington's involvement in the North Suburban HOME Consortium likely means that a fairly recent housing market assessment has been conducted.

The following pages include sample maps that provide insight into some notable trends relating to Arlington's housing stock – namely, the low building value as compared to land value for many residential properties (which speaks to the high land value in Arlington), and the age of the Town's housing stock.

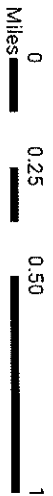


TOWN OF ARLINGTON

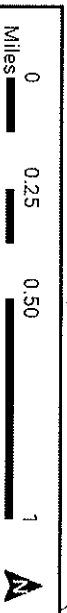
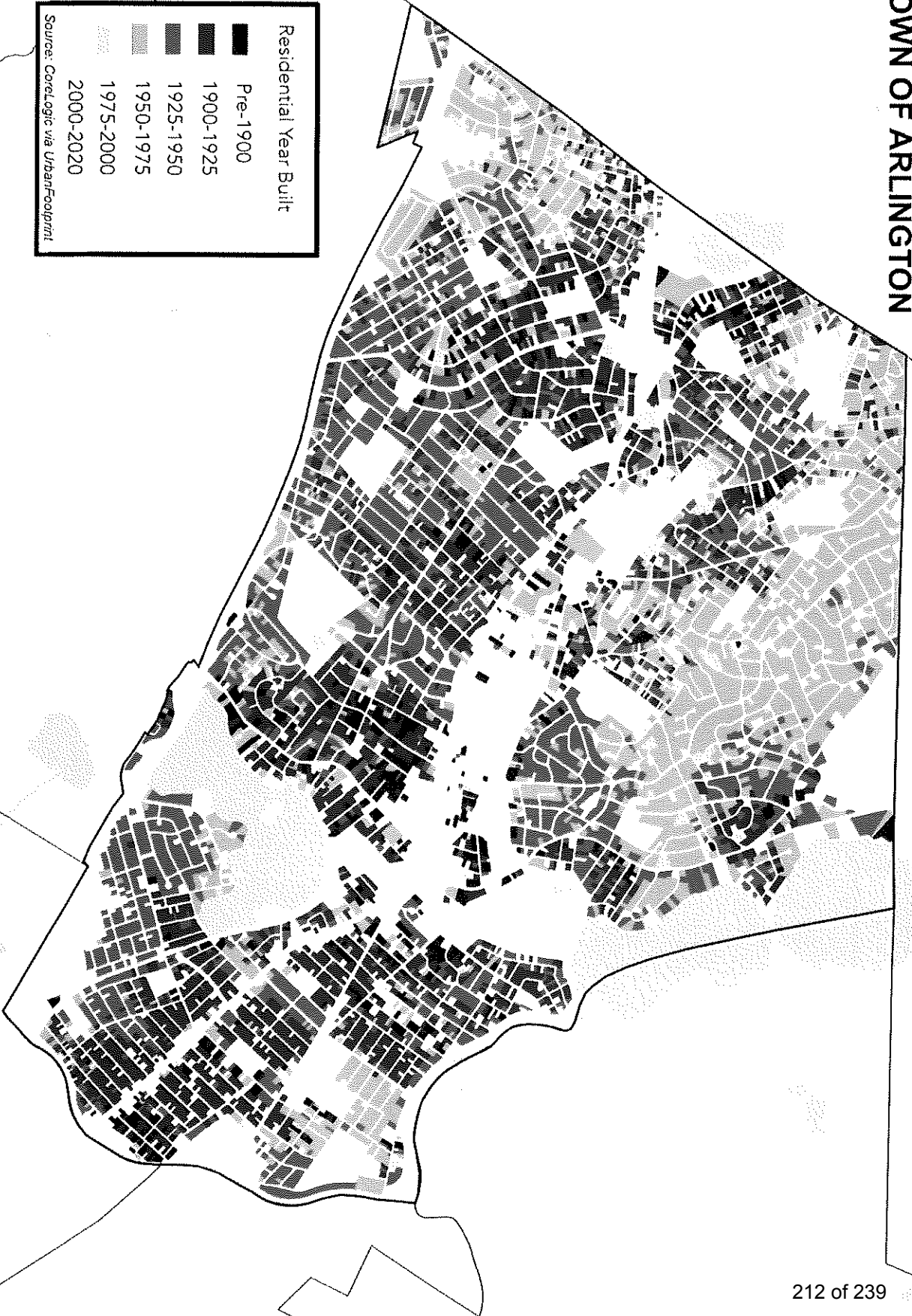
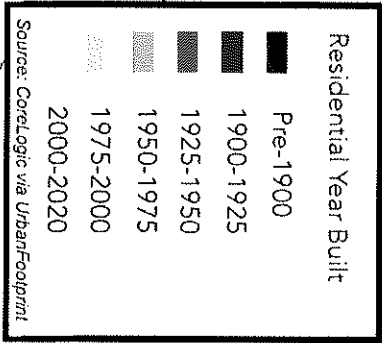
Residential Building to
Land Value Ratio



Source: CoreLogic via UrbanFootprint

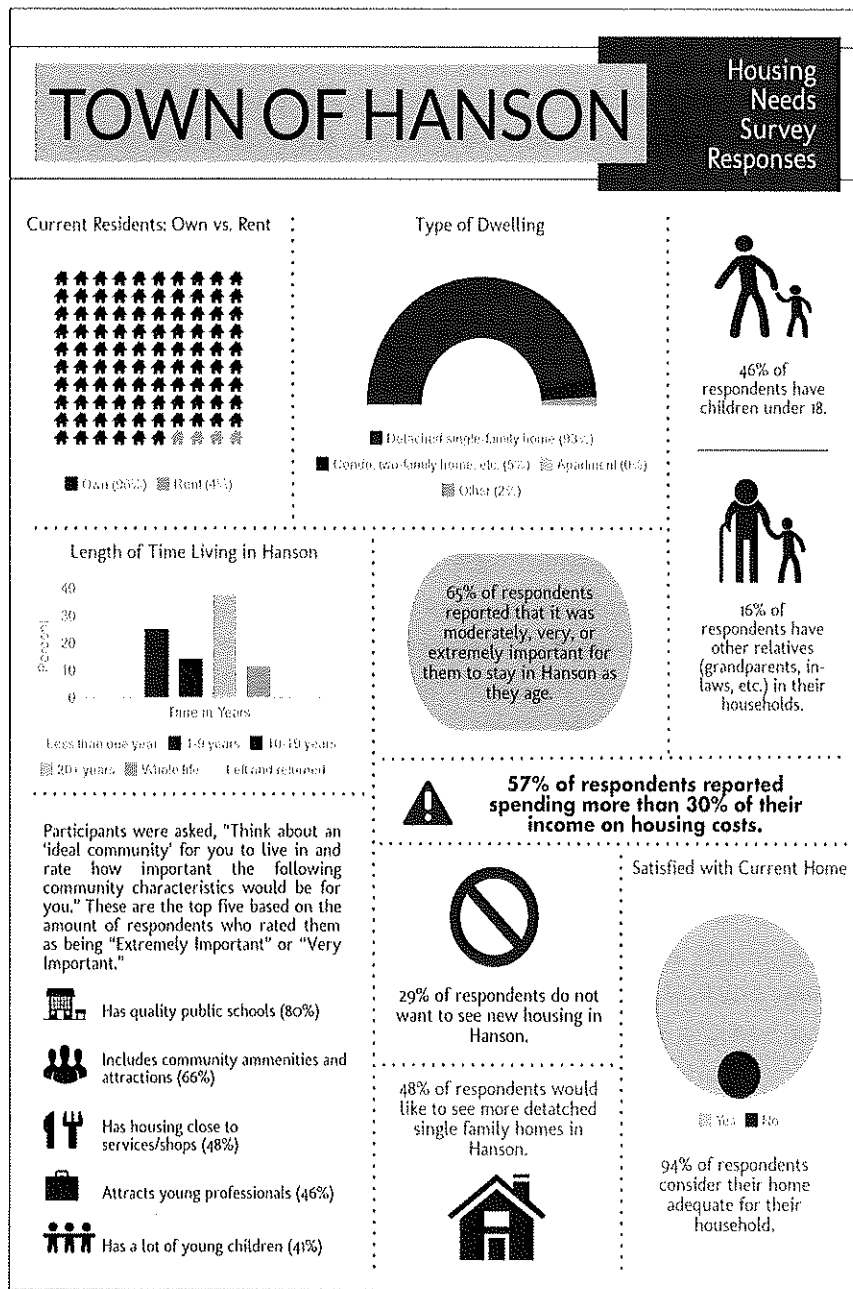


TOWN OF ARLINGTON



- **Affordable Housing Barriers and Opportunities.** No housing needs assessment is complete without an assessment of local capacity and barriers to affordable housing development. As stated in the RFP, we understand that Arlington's barriers today are largely the same as those identified in the 2016 plan, so we will focus on opportunities to address these existing and known impediments with updated actions, as well as identifying new or evolving barriers. To do so, we will review Arlington's land use regulations and permitting procedures, transportation, infrastructure, and public services for their potential impact on present and future housing development, and specifically on the creation and preservation of affordable housing. In addition, we will review, analyze, and describe existing housing development capacity in Arlington, considering local and regional organizations, both public and private, access to funding, and so forth.
- **Fair Housing Assessment.** Depending on its level completion at the time of our needs analysis, we will review and incorporate the findings from the Town's (in-progress) Fair Housing Plan. Working as closely as possible within the framework of HUD's Affirmatively Furthering Fair Housing planning process, we will supplement these findings through an evaluation of available data and information gathered for the previous tasks to assess fair housing barriers in Arlington. The goal will be to identify housing policies and practices that disproportionately affect groups protected by the federal Fair Housing Act and state law. Arlington's current work with Metropolitan Area Planning Council will prove helpful for this task, and we look forward to reviewing this Fair Housing Plan when it is made available.
- **Issues Analysis.** Our team will identify and document key issues and findings from the research and analysis tasks performed above and generate a discussion document and maps for review and comment by the Town. The issues analysis will focus on not only statistical indicators of housing need, but also regulatory, physical, infrastructure, and capacity impediments that should be accounted for in developing housing plan strategies and recommendations. Each required component in DHCD's Housing Production Plan guidelines will be addressed, including recommended goals and action items.
- **Second Community Meeting.** Following Town review of the issues analysis, we will host a second community meeting to present our findings to the public and solicit feedback. In our experience, providing residents with the chance to see the results of the input they provided through the public engagement process reassures them that their voices are heard and fosters a sense of community responsibility for the plan. It also builds into the planning process a way for us to verify that we *did* hear what the community told us, and a platform for providing some public information and education about the role housing plays in perpetuating health, income, and other inequities on the basis of race, class, immigration, family status, disability, and other factors.





Infographic from a Housing Production Plan our firm completed in 2019 for Hanson, MA. This visualization provided a snapshot of results from an online survey we conducted as part of our Needs Assessment.

HOUSING GOALS

Following local review of the Housing Needs Assessment, our team will assist the Town in developing goals for the Housing Production Plan. "Goals" are numeric on one hand – such as number of units – and *qualitative* on the other hand, e.g., types of housing the Town needs, social equity considerations, underserved settings with critical housing needs, and housing choices. These goals will flow into the action and implementation plan and will be shaped from the needs analysis. Some, perhaps many, of the new plan's goals may reinforce, follow, or build upon the goals of the 2016 Plan.



IMPLEMENTATION STRATEGIES (ACTION PLAN)

- **Area and Site Suitability Criteria.** We will work with Town staff and boards to determine criteria that can be used to identify and evaluate areas and potential sites for affordable or mixed-income housing, or housing in mixed-use developments. For site identification decisions, we always encourage local officials to identify properties or areas they consider appropriate and let the consultants conduct a technical, place-based review of those sites. This approach has always worked well, in our experience, largely because it respects the knowledge that already exists in local government and reinforces that the community owns the plan. It creates an early opportunity in designing the action plan for the Town to assert its preferences and have meaningful authorship of the plan's content.
- **Recommendations.** Our team will identify opportunities for regulatory reform and other mechanisms to bridge the gap between existing conditions and Arlington's affordable housing needs. These recommendations will address Town-wide housing needs across income levels and should include, at a minimum:
 - Land development regulations, in particular exploring zoning incentives that will enable the successful execution of current planning efforts such as Connect Arlington;
 - Financial mechanisms to support the development of affordable housing;
 - Employer and institutional involvement;
 - Potential use of Chapter 40B, Chapter 40R, and other measures;
 - Staffing needs for carrying out affordable housing initiatives;
 - Potential for partnerships or regional collaborations, especially any identified through the MMC Regional Housing Taskforce and MAPC's MetroCommon 2050; and
 - A review of "best practices" from other communities in New England and beyond, considering communities with similar demographics and location characteristics.
- **Implementation Schedule.** Barrett Planning will propose a five-year action plan schedule to guide the Town's implementation of strategies outlined in the plan. This schedule will outline specific milestones and timeframes, developed in careful consideration with Town staff and the advisory committee.
- **Presentations (Including Third Community Meeting).** Our team will present a final public presentation of key findings, goals, and strategies at a public meeting sponsored by the Arlington Redevelopment Board or other entity as determined by the Town and present the final Housing Production Plan at a public meeting of the Board of Selectmen. Ideally, the Select Board and Arlington Redevelopment Board should conduct a joint hearing to consider the proposed Housing Production Plan, as both boards are required to approve the plan and submit it to DHCD for review.



COMMUNITY ENGAGEMENT ASSUMPTIONS

Barrett Planning Group assumes the following meeting commitments and project coordination responsibilities in order to complete this project:

- Kickoff meeting with the Planning and Community Department and to discuss the project approach and timetable, refine the scope of work, and develop the engagement plan (see “Mobilization,” above). If the advisory committee has already been selected by the Town, its members should be involved, as well; if not, this meeting can allow the Town and consultants to discuss the makeup and role of the advisory committee.
- Individual and small-group interviews with people knowledgeable about the Town’s housing conditions and needs, as described above. Examples of the types of interviewees we typically meet with include residents of public housing and privately owned and managed affordable housing (residents of affordable and market-rate units), housing developers (for-profit and non-profit); representatives of social service organizations and faith-based communities; bank representatives, mainly focusing on mortgage loan and multifamily loan products; Town staff and representatives of key Town boards; representatives of existing neighborhood associations; and local businesses, the Arlington Chamber of Commerce, and so forth.
- A public engagement strategy to obtain input from residents as the planning process unfolds. The strategy should at minimum include a community survey (online), but depending on Arlington’s experience with public participation and the evolving constraints of COVID (see virtual engagement discussion below), techniques such as a pop-up participation event downtown or at the neighborhood level could be considered if and when it is safe to do so. We have had excellent results using “low-tech” participation methods like placing a large comment board in public places where residents can write down their ideas in response to a question prompt on the board. An audience-specific meeting could be considered, too, e.g., an engagement event at the senior center. In some cities and towns, close collaboration with faith-based communities has helped to involve groups that are often under-represented in community planning activities. These and other ideas should be discussed, and decisions should be made about them, at the kickoff meeting so we can prepare a public participation plan to guide the entire housing planning process.
- Three meetings with advisory committee and Planning and Community Department, in addition to the kickoff meeting and scheduled prior to each public meeting:
 - To discuss public engagement process and prepare first public meeting
 - To review Needs Assessment findings
 - To review proposed Goals and Actions
- Three public meetings:
 - To educate the public about this process and solicit their feedback
 - To present findings from Needs Assessment and solicit input



- To present overview of draft final plan
- Reasonable daytime project coordination sessions with the Planning and Community Development Department.

We understand that these assumptions may need to be adjusted following discussions at the kickoff meeting. We recommend including opportunities for civic engagement during the early phases of the project so the public will know this project is underway and that residents will have a chance to participate well before the plan is substantially developed.

Thoughts on Virtual Engagement

Our firm has Zoom, Zoom Webinar, and Webex licenses and we have used all of them for community participation work. We bring considerable expertise and a high comfort level with virtual engagement, and although it presents access and equity concerns that we are keenly aware of, we also see that it has enabled participation by many people who did not engage in face-to-face planning events because of work and family conflicts. Our success with online participation had a great deal to do with why the Pioneer Valley Planning Commission recently hired us to lead the engagement process for two of their community master plans, as did the Town of Chatham for an upcoming community conversation process about affordable housing development on town-owned land.

To reduce the discomfort that some people feel with Zoom and other virtual participation platforms, we design meetings to be interesting and unthreatening to participants, using tools we can integrate or pair with Zoom such as Padlet and Quizizz in addition to the Zoom whiteboard and conventional techniques such as the Zoom chat feature. We always spend a few minutes orienting participants at the start of each meeting, and one staff member is always on our meeting team for tech support. In addition, we maintain a subscription with Otter.ai for real-time streaming of meeting notes so that people with hearing impairments can participate. In general, we much prefer to conduct virtual meetings as Zoom meetings, not Zoom Webinar, because the former is a much better option for promoting a sense of community within these events. We are flexible, however, and will work with the Town to design the best possible remote participation experience.

DELIVERABLES

We will provide two copies of all reports as well as Microsoft Word and PDF digital copies. This includes interim reports (Housing Needs, Goals, and Strategies) as well as the Final Housing Production Plan. Additionally, we will provide digital copies of PowerPoint presentations for each public meeting, and GIS map packages for maps prepared in support of the plan.



TOWN ASSISTANCE

We anticipate needing the following data, information, and assistance from Town staff:

- GIS data: the Town's assessor's parcel map and assessor's database; roads; infrastructure (water/sewer, if available); zoning map; historic districts map (if applicable); open space datalayer; most recent orthophotos.
- The most recent update of the Zoning Bylaw (Word or PDF).
- Lists (print or electronic) of recent site plan, special permit, and subdivision submissions to the Town, by year for the past five years (since the last HPP was written), with information about number of approved dwelling units, if available (ideally in Excel or another editable format).
- A few sample decisions of the Arlington Redevelopment Board and Zoning Board of Appeals for site plan and special permit approvals (Word or PDF).
- List of residential building permits over the past five years (ideally in Excel or another editable format).
- Assistance with scheduling interviews. We will provide an online sign-up system and will ask Town staff to distribute a link to it by email.
- Assistance with outreach for public meetings. We will provide all required outreach materials for the Town's use. We ask that the Town help to disseminate these materials to the community.



PROJECT SCHEDULE

The chart below lists the seven core tasks for this project and approximate time required for each major phase of the project. (Time is expressed in number of weeks from Notice to Proceed.)

		Within 4 Weeks	Within 8 Weeks	Within 12 Weeks	Within 16 Weeks	Within 20 Weeks	Within 26 weeks	Within 30 Weeks
Mobilization	Kickoff Meeting	XXXX	XXXX					
	Town Tour	XXXX	XXXX					
Needs Assessment	Interviews/ Focus Groups		XXXX					
	First Community Meeting		XXXX					
	Completion of Needs Assessment				XXXX			
	Second Community Meeting					XXXX		
Goals, Strategies, Implementation	Draft Goals					XXX		
	Draft Strategies and Implementation Plan					XXXX		
Final Steps	Draft HPP						XXXX	
	Third Community Meeting						XXXX	
	Presentation to Select Board							XXXX
	Final Plan							XXXX



RELEVANT EXPERIENCE

The following is a representative list of recently completed Housing Production Plans and similar housing planning and policy work by Barrett Planning Group principals and staff.

- Housing Production Plan, Town of Dennis; completed 2021
- Housing Production Plan, Town of Wellesley; completed 2018
- Housing Production Plan, Town of Brewster; completed 2017
- Housing Production Plan, Town of Lenox; completed 2017
- Housing Production Plan, Town of Brookline; completed 2016
- Housing Production Plan, Town of Nantucket; completed 2016
- Governor Prentice Inn Reuse Assessment, Town of Orleans; completed 2021
- Millstone Road Community Engagement Process, Town of Brewster; completed 2020
- Central Florida Regional Housing Coalition, consultant and guest speaker, "Zoning for Affordable Housing," 2017-2018
- Chapter 40B Handbook for Zoning Boards of Appeal (prepared for Massachusetts Housing Partnership); completed 2017
- Nantucket Affordable Housing Trust Strategic Plan; completed 2018
- Nantucket Workforce Housing Needs Assessment, Housing Nantucket, Inc.; completed 2015
- Newton Housing Strategy, City of Newton; completed 2015
- Falmouth Housing Needs Study and Demand Analysis; completed 2014 (APA-MA Project Planning Award)
- Housing Production Plan, Town of Groton; completed 2014
- Amherst Housing Market Study; Inclusionary Zoning Review and Tax Incentive Subsidy Strategy; Town of Amherst, 2015



REFERENCES

BARRETT PLANNING GROUP (LEAD CONSULTANT)

Wellesley Housing Production Plan (2018)

Meghan Jop, Executive Director of General Government Services

Email: mjop@wellesleyma.gov

Phone: 781-431-1019, x2201

Email: mjop@wellesleyma.gov

Brookline Housing Production Plan (2016)

Alison Steinfeld, Director

Joseph Viola, Assistant Director

Brookline Planning Department

Phone: (617) 730-2130

Email: asteinfeld@brooklinema.gov or jviola@brooklinema.gov

Nantucket Housing Production Plan (2017)

Andrew Vorce, AICP

Director of Planning and Land Use Services

Phone: (508) 325-7587

Email: avorce@nantucket-ma.gov

Hingham Master Plan (2021)

Gordon Carr, Chair

Hingham Master Plan Committee

Phone: (617) 835-5835

gordoncarr@gmail.com

HORSLEY WITTEN GROUP

Shrewsbury Master Plan

Kristen Las, AICP

Assistant Town Manager/ED Coordinator

Town of Shrewsbury, MA

(508) 841-8508

klas@shrewsburyma.org

Horsley Witten Group led the Shrewsbury Master Plan process, with Barrett Planning Group as a subcontractor. Horsley Witten Group subsequently led the Shrewsbury Town Center Study and assisted with the Beal School Sale RFP Development.



Proposal for Housing Production Plan: Town of Arlington

Norton Town Center Study and Bylaw Revisions

Paul DiGiuseppe, CNU-A, MPA

Director of Planning & Economic Development

Town of Norton, MA

Phone: (508) 285-0279

pdigiuseppe@nortonmaus.com



RESUMES AND PROPOSAL CERTIFICATIONS





PROFESSIONAL SERVICES

Community Planning
Neighborhood Development
Zoning & Regulatory Reform
Housing Policy & Planning
Fiscal & Economic Impact
Technical Assistance



FIRM PROFILE

Barrett Planning Group LLC provides high-quality, customized planning and community development services for cities and towns and non-profit organizations. Founded by Judi Barrett, a veteran planner with over 33 years of experience in the field, Barrett Planning Group is known for our creative approach to planning and problem-solving, our expertise as trainers and technical assistance providers, our attentiveness to clients, and our expertise in capacity building. We help municipal leaders strategize and become persuasive advocates for the people who live and work in their communities and the small businesses that fuel the local economy. We offer fresh ideas worth listening to and advocate for public policies inspired by a commitment to basic social fairness.

WHAT WE DO

- Community-wide and neighborhood-level planning
- Training, technical assistance, and capacity building
- Public education
- Community engagement
- Ordinances and bylaws
- Housing policy analysis and planning
- Market analysis
- Socioeconomic impact analysis
- GIS mapping and spatial analysis

OUR MISSION

Barrett Planning Group meets the planning and capacity building needs of local governments and their private-sector partners. We deliver customized, place-based products and services of lasting value, and we collaborate with other firms that share our commitment to quality and innovation. In all our work, Barrett Planning Group advocates for healthy, sustainable, and culturally and educationally rich communities.

Barrett Planning Group LLC is a certified women business enterprise (WBE) by the Massachusetts State Office of Supplier Diversity.



JUDI BARRETT
 Owner and Managing Director
 Barrett Planning Group LLC
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 Plymouth, MA 02362
 judi@barrettplanningllc.com
 781.934.0073 Ext. 7

BACKGROUND

Judi Barrett is the founding principal and managing director of Barrett Planning Group LLC. She brings 33 years of planning and community development experience as a consultant and community and economic development professional with state and local government. Judi has devoted her career to building the capacity of cities and towns to solve difficult public policy questions and to develop effective leadership and advocacy skills. She has prepared and managed a variety of projects for public and private clients, including comprehensive and strategic plans, zoning revisions, housing studies, and more. She is well known for her work in affordable and fair housing policy and inclusionary zoning. A frequent panelist at regional and national conferences and a guest lecturer for planning programs, Judi is also a technical assistance resource and trainer for city and town officials and non-profit boards.



PROFESSIONAL EXPERIENCE

Professional Affiliations & Service

- American Planning Association
- APA-Massachusetts Chapter, Chair, Housing and Community Development Committee
- Urban Land Institute, Boston/New England Chapter, Member, Housing and Economic Development Product Council
- Trainer, APA-MA AICP Exam Preparation Course: Economic Development and Public Participation Modules
- Trainer, Citizen Planner Training Collaborative (CPTC)
- Trainer, Neighborhood Revitalization Strategy Areas (NRSA) and Neighborhood Planning Strategies for HUD CDBG Grantees
- Guest Lecturer, Graduate Planning Courses, University of Massachusetts, Massachusetts Institute of Technology, Harvard Graduate School of Design

Owner and Managing Director, Barrett Planning Group LLC, April 2017-Present. Founder of small private consulting firm providing strategic planning, training, and technical assistance services to municipalities from Maine to Florida. Judi Barrett has prepared numerous comprehensive plans, affordable housing and fair housing studies and plans, neighborhood revitalization and commercial center vision plans, and zoning ordinances and bylaws over her 33-year career. She is highly respected for her work in socioeconomic and fiscal impact analysis.

Director of Municipal Services, RKG Associates, Inc., May 2013-April 2017. Played an instrumental role in expanding RKG's practice in Massachusetts as part of a longer-term company plan to consolidate and reorganize its New England economic development operation. Responsible for marketing, business development, project management, client relations, and supervising teams of RKG staff and subcontractors. Projects ranged from comprehensive plans to major zoning revisions, housing market studies, economic development plans and policy studies, conflict resolution, and training and technical assistance contracts.

PROFESSIONAL EXPERIENCE

Director of Planning, Community Opportunities Group, Inc., March 1996-April 2013. Established and built a well-respected municipal planning practice for a small Boston-based firm that specializes in community development and housing. Planning group offered services in city and town planning, open space and recreation plans, housing and economic development plans, zoning, fiscal impact analysis, technical assistance, and capacity building. Also provided expert witness services for Chapter 40B comprehensive permit appeals. Won three planning awards from the Mass. Chapter of the American Planning Association.

Director, Community Development Fund, Executive Office of Community Development, June 1993-March 1996. Managed the Community Development Fund (CDF), the Commonwealth's largest set-aside of Community Development Block Grant (CDBG) funds for non-entitlement cities and towns. Directed annual application round, prepared application package and technical assistance materials, oversaw the review and awards process, and supervised grant compliance and grantee monitoring. Reported to Deputy Secretary of Community Development.

Community Development Administrator, Town of Plymouth. September 1988-June 1993. Responsible for developing a comprehensive community development department offering housing, economic development, park and open space, and other programs and services with CDBG and other funds. Oversaw the formation of Plymouth's "Main Street" program (Downtown/Waterfront), wrote the special legislation that created the Tourism Fund and Visitor Services Board, and provided staff support and technical assistance to numerous boards and commissions. Assisted with preparing master plans for the Downtown/Waterfront Area, North Plymouth, and Manomet.

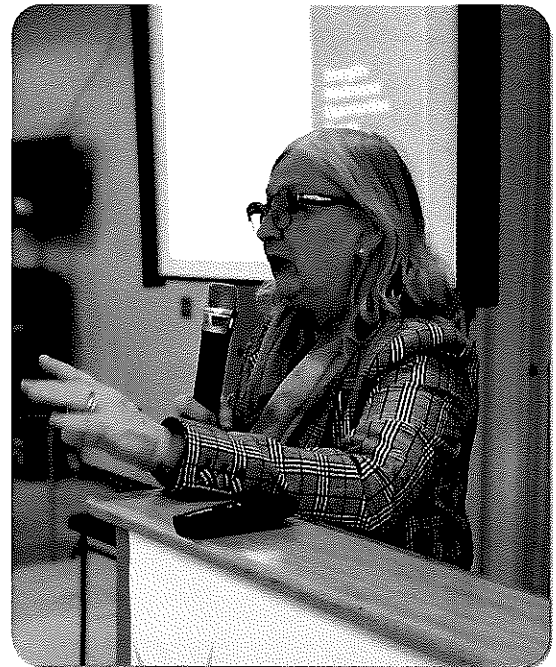
EDUCATION

Harvard University, Bachelor of Liberal Arts (cum laude).
Concentrations: American Civilization and Government.

Graduate coursework in **American Studies, University of Massachusetts Boston; and Economics and Community Development, Harvard University and Tufts University.**

Recent Conference Presentations

- APA National Planning Conference, 2015, 2016, 2017, 2018
- Central Florida Regional Affordable Housing Coalition, 2018 Housing Summit, "Regulatory Strategies to Create Affordable Housing"
- ULI Housing Conference: Housing Opportunity, 2016, Boston, Massachusetts. "Affordability in the Suburbs: From Fair Housing to Community Opposition"
- APA Northeast Region Conference, 2015, Saratoga Springs, NY. "Getting Ahead of Demographic Trends"
- Southern New England APA Conference, 2011-2017, 2019
- Massachusetts Housing Institute, 2014, 2015, 2018
- Cape Cod Housing Institute, 2017, 2018, 2019, 2020



REPRESENTATIVE LIST OF CURRENT AND PAST ENGAGEMENTS

Zoning & Regulatory Barriers Assessment

Southbridge Comprehensive Zoning
Revision

Bedford Great Road Zoning Revision

Tewksbury Comprehensive Zoning Revision

Beverly Inclusionary Zoning Bylaw

Salisbury Inclusionary Zoning Bylaw

Lenox Comprehensive Zoning Revision

Comprehensive Zoning Update for
Downtown Needham

Comprehensive Planning

Hingham Master Plan

Littleton Master Plan

Tewksbury Master Plan

Westford Comprehensive Plan

Dedham Master Plan

Lincoln Comprehensive Plan

Medfield Master Plan

Fair Housing & Equity Assessments

WestMetro HOME Consortium (Newton)

City of New Bedford

City of Worcester

Citizen Planner Training Collaborative

Socioeconomic Impact Analysis

National Development, Waterstone & Bridges at Lexington

Westwood Planning Board, University Station

Westford Multifamily Impact Analysis

Dedham Planning Board, Legacy Place

Jeffrey Donohoe Associates, Impact of Relocating Military
Personnel from Island of Guam

North Andover Community Development Department,
Osgood Landing Chapter 40R District

Technical Assistance & Strategic Planning

Citizen Planner Training Collaborative (CPTC) Comprehensive
Curriculum Revision & Update

GrowSmart RI/Land Use Training Collaborative Strategic Plan

City of Chelsea Strategic Plan for Affordable Housing

Departmental Reorganization Study, Town of Medway





ALEXIS LANZILLOTTA

Project Manager

Barrett Planning Group LLC

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BACKGROUND

Alexis Lanzillotta joined Barrett Planning Group in 2018 after enjoying a twelve-year career as a public school teacher. She brings many of the skills cultivated in the classroom to her role as a project manager for Barrett Planning Group, particularly in creating educational materials for clients and designing community engagement opportunities that promote participation, collaboration, and enthusiasm among attendees. Alexis has designed sophisticated workbook tools for the firm that can efficiently organize and analyze data from public sources and select proprietary services. She is also the firm's team leader for graphic communications, using tools like Adobe Illustrator to provide polished graphics for community engagement events, public meetings and hearings, and final reports.



PROFESSIONAL EXPERIENCE

Project Manager, Barrett Planning Group: 2018-Present. Responsible for demographic, economic, and fiscal impact research and analysis for our municipal and private non-profit clients. Coordinates the work of subcontractors on major project teams. Responsible for report writing and editing assignments, developing materials for public meetings and co-facilitating public workshops. Expertise in Adobe graphics applications and infographics design.

Latin Teacher, Duxbury Public Schools: 2006-2018. Taught introduction to the Latin language and an overview of Roman culture to grades 7-8. Collaborated with colleagues to restructure the Duxbury Latin curriculum based on ACTFL standards.

Latin Tutor, Academic Resource Center, Tufts University: 2004-2005.
Independent Tutor: 2006-2012.

EDUCATION

M.Ed. in Curriculum and Teaching, Fitchburg State University, 2010.

B.A. in Latin (cum laude), Tufts University, 2006.

Also successfully completed graduate-level coursework at the **University of Massachusetts Boston**, 2013-2019, in the history of Latin literature and methodologies for teaching Latin.

Professional Affiliations

- American Planning Association Member
- Massachusetts Association of Planning Directors Member

Special Interests

- Graphic design
- Geographical analysis
- Visioning and consensus building processes

Current & Recent Projects

- East Milton Square Visioning Process
- Bridgewater Comprehensive Master Plan
- Brewster Millstone Road Visioning Process
- Hingham Master Plan
- Citizen Planner Training Collaborative (CPTC) Curriculum Update



TYLER MAREN

Community Planner

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BACKGROUND

Community Planner Tyler Maren comes to Barrett Planning Group as a recent graduate of Clark University's renowned graduate program in Community Development & Planning. Tyler specialized in studying housing issues, which fostered a strong interest in urban planning, human geography, social justice, and public service. Tyler believes that planning is important to ensuring that our communities evolve and grow in an equitable, healthy, and sustainable way. His areas of experience include working with municipalities on planning and zoning issues, affordable housing, community engagement and research, and GIS mapping.

PROFESSIONAL EXPERIENCE

Community Planner, Barrett Planning Group LLC, September 2020-Present. Provides general project support, zoning review, and advanced statistical analysis. Responsible for writing and editing reports for our municipal clients.

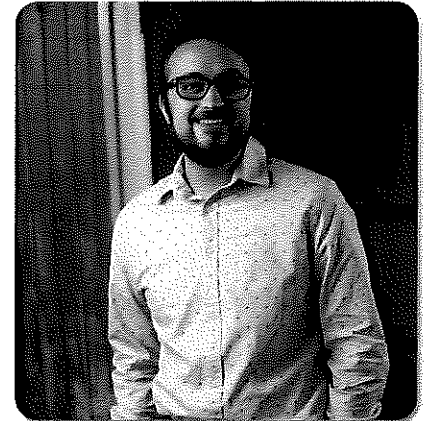
Planning & Zoning Assistant, Town of Westford, MA, September 2017-September 2020 (Intermittent). Assisted the Planning and Zoning departments with document preparation, GIS tasks, site visits, and meeting minutes. Gained wide-ranging experience in government administration, local housing and economic development issues, and community engagement.

Research Assistant, A Case Study in Rural Southwestern Uganda, Colgate University, May 2012. Conducted academic research with a team of 14 students and professors on location in Southwestern Uganda. Led field studies in villages near the Bwindi Impenetrable National Park. Gained practical experience in GIS as well as qualitative and quantitative data collection.

EDUCATION

Clark University, Master of Arts in Community Development & Planning, 2020. Concentration in Urban Resilience. Published research paper on housing issues for refugee populations in Worcester, MA. Treasurer, IDCE Graduate Student Association, 2019.

B.A. in Geography (magna cum laude), University of Massachusetts Amherst, 2016. Charter member, UMass Amherst Chapter: Gamma Theta Upsilon (international geography honor society). President, UMass Amherst Geography Club, 2016.



Professional Affiliations

- American Planning Association Member
- Massachusetts Association of Planning Directors Member

Special Interests

- Equitable housing issues
- Human geography
- GIS and geographical analysis

Current & Recent Projects

- Boxborough Planning Board Zoning Audit
- Lancaster Planning Board Inclusionary Zoning Feasibility Study
- Bridgewater Comprehensive Master Plan
- Dennis Housing Production Plan



CATHERINE DENNISON

Community Planning Associate

Barrett Planning Group LLC

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781.934.0073 Ext. 5

BACKGROUND

Catherine Dennison joined Barrett Planning Group in 2020 as a Community Planning Associate. Catherine is a recent graduate of Wellesley College, where as a Davis Scholar, she studied American Studies and Economics with a concentration on Race, Gender, and Class in the United States in the Twentieth Century. Her research in Indigenous women's representation earned her recognition as a Knapp Fellow in the Social Sciences. As a leader and advocate in the Davis Scholar community, Catherine facilitated creative and cooperative problem-solving efforts to address unmet needs. Catherine's range of experience from retail management to research equips her for her role at Barrett Planning Group, where she enjoys varied responsibilities that challenge her and help her to exercise and develop her skills.



PROFESSIONAL EXPERIENCE

Community Planning Associate, Barrett Planning Group LLC, September 2020-Present. Provides research support, including data and resource compilation, organization, and analysis. Conducts interviews and surveys to support community engagement and data collection. Assists in drafting, editing, and preparing reports and professional development materials. Responsible for advanced document layout finalization in Adobe InDesign.

Store Manager, DAVIDsTEA at Derby Street, December 2016-July 2018. Operated one of the highest volume and most profitable DAVIDsTEA locations in New England. Ensured the team's consistent delivery of outstanding customer experiences and developed strategies for reaching and surpassing retail sales targets while controlling costs. Responsible for recruiting and training staff, overseeing day-to-day store operations, and creating and fostering relationships with local businesses through outreach and community events.

EDUCATION

B.A. in American Studies, Wellesley College, 2020. Minor in Economics. Concentration on Race, Gender, and Class in the United States in the Twentieth Century. Davis Scholar, 2018-2020. Davis Scholar Class Council Treasurer, 2018-2019. Knapp Fellow in the Social Sciences, 2020.

Special Interests

- Data visualization and presentation
- Social and economic history

Current & Recent Projects

- Citizen Planner Training Collaborative (CPTC) Curriculum Update
- Hingham Master Plan
- Nantucket Housing Production Plan
- Site Future Use Study for the Town of Orleans
- City of Quincy Language and Disability Communications Access Needs Assessment
- Technical Assistance, Milton Zoning Board of Appeals



Nathan Kelly AICP, NCI

Principal Planner
nkelly@horsleywitten.com
401-272-1717

Areas of Expertise

Comprehensive Planning
Regulatory Reform
Village and Downtown Planning
Low Impact Development
Watershed Planning & Assessment

Professional Registrations & Affiliations

AICP
National Charrette Institute (NCI)
Charrette System™ Training Certification
APA, CT Chapter
APA, MA Chapter
APA, RI Chapter
Dragonfly Society of the Americas

Academic Background

Masters of Arts,
Urban and Environmental Policy and
Planning, Tufts University
Graduate courses in Applied Watershed
Management, Negotiation and Conflict
Resolution, Land Use Management,
Urban Planning, and Environmental Law
Bachelor of Arts, Philosophy and English,
Boston College

Professional Experience

Horsley Witten Group, Inc.,
Principal Planner, 2000 to present

Nathan Kelly is a Principal with HW and directs the firm's Providence, Rhode Island office. Nate has over 20 years of project management experience, and has provided professional planning, zoning, and facilitation services to more than 50 New England municipalities. Nate served as President of the Rhode Island Chapter of the American Planning Association from 2017-18 and serves on Grow Smart Rhode Island's Land Use Training Collaborative. He regularly provides training services for the Cape Housing Initiative and the Mass Housing Partnership and received the Friends of the Network award from Rhode Island's Housing Network in 2020. Nate earned his master's degree in Urban and Environmental Policy from Tufts University and currently resides in Providence, RI.

KEY PROJECTS

Community Master Plans: Managed the development of Community Master Plans for over a dozen municipalities across New England. Communities include, but are not limited to: Canton, Easton, Shrewsbury, and Sudbury, MA; Burrillville, Narragansett, and South Kingstown, RI; Exeter and Stratham, NH; and Haddam, CT.

Comprehensive Zoning Reform: Led the development and adoption of comprehensive zoning and subdivision reform in Attleboro, Athol, Braintree, and Walpole, MA; Groton and Waterford, CT; and Jamestown and North Kingstown, RI.

Village/Downtown Planning: Served as the project lead for over a dozen village/downtown planning and zoning projects. Each project assessed the unique opportunities and challenges related to housing, economic development, infrastructure, zoning, and environmental issues. Projects include Norton, Shrewsbury, Stoughton, and Yarmouth, MA; North Kingstown, South Kingstown, and Pawtucket, RI; Groton, CT; and Exeter, NH.

Open Space and Recreation: Served as project manager or principal-in-charge for over a dozen open space and recreation plans/needs assessments for Massachusetts communities including, but not limited to Billerica, Bourne, Scituate, and Yarmouth.

"House Doctor" Services for MassDevelopment: Provides on-call planning and zoning services for communities funded through various MassDevelopment programs. Recent efforts include the Town Center Study for Shrewsbury, MA and the Gateway Rezoning for the Town of Grafton, MA. Shrewsbury's project also included support services for developing an RFP to sell a school to a private developer.

Exeter Housing Future: As part of Master Plan implementation, led a public outreach process to assess the potential for three different neighborhoods to accommodate higher volumes of more diverse housing. Ultimately drafted new zoning tailored to each area, which was unanimously adopted. The project won "Plan of the Year" in 2020 from the local APA Chapter.

Conant Thread District: Provided planning and zoning services to the cities of Pawtucket and Central Falls, RI for the establish of an inter-city Transit Oriented Development district. The project included new zoning provisions and design standards for both cities and a complete set of procedures and regulations for the state's first inter-city Joint Planning Commission.



Middletown on the Move, City of Middletown, CT: Worked with the City to identify brownfield properties that may be appropriate for reuse as active recreation space. Organized public engagement activities for the project, including community interviews, site tours, open houses, public forums, online surveys, and a project website and social media.

Smith Island Vision Plan, MD: Supported the Consensus Building Institute (CBI) in developing a Vision Plan for the island residents in the wake of Hurricane Sandy. Facilitated the process, and developed the final document.

Quonset Development Corporation Permitting and Development Standards: Unified the separate Town Zoning Districts on QDC land into a single Quonset Zone and Developing complementary enforcement mechanisms between the Town and QDC Quonset Development Corporation Permitting and Development Standards. Updated all of QDC's performance standards for building design, site design, and utilities.

40R District Implementation, Brockton, MA: Lead planning consultant for the establishment of the Thatcher Street Smart Growth Overlay District in service to the Archdiocese Planning Office of Urban Affairs (POUA). The district includes the conversion of an existing convent to affordable housing and infill of new units on the convent grounds. Nathan developed all application materials including the new Zoning Ordinance provisions.

Rooftop Solar Bylaw & Policy Guidance: Worked with the Massachusetts Executive Office of Energy and Environmental Affairs (EEA) to develop a model local bylaw and accompanying guidance document for use by Massachusetts municipalities to regulate the development of small-scale solar energy systems.

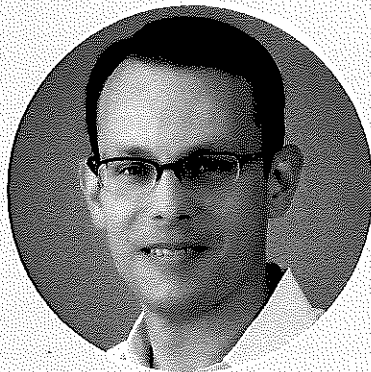
Commonwealth of Massachusetts Smart Growth/ Smart Energy Toolkit: The Executive Office of Energy and Environmental Affairs developed a Smart Growth/Smart Energy Toolkit as an interactive CD-ROM training manual. Served as one of the lead planning consultants for this effort and authored the material for many of the Smart Growth techniques that were examined in detail.

Rhode Island Community LID Site Planning and Design Guidance: Served as the project manager for the development of a local guidance manual that will serve as a companion to the upcoming revision to the Rhode Island state stormwater standards. The manual will provide a variety of techniques that can be used at the local level to promote better site design and compact development.

Inclusionary Zoning Guidance, Department of Administration, State of Rhode Island: Developed definitive guidance manual for municipalities to effectively implement inclusionary zoning. The manual focused on suburban and rural communities that would expect incremental development through small subdivisions.

Salmon River Watershed (SRW) Regulatory Recommendations, CT: Partnered with The Nature Conservancy (TNC) and leaders from nine communities in the SRW of central Connecticut. Facilitated meetings with Town officials and staff, and conducted assessments of Zoning Regulations, Subdivision Regulations, and Inland Wetlands and Waterways Regulations. Drafted and presented regulatory recommendations applicable to each community within the SRW.

Strategies to Protect Farms and Forests, Rhode Island Department of Environmental Management (RIDEM) and Rhode Island Agricultural Partnership: Worked with municipal officials from across the state, the project developed guidance for towns to identify business uses or commercial operations that will help maintain the viability of farms, provide incentives to limit the loss of working farm and forest lands, and adopt performance standards for these farm-based business activities.



Jeff C. Davis, AICP

Senior Planner

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401-272-1717

Areas of Expertise

Land Use & Comprehensive Planning
Neighborhood Planning
Housing
Community Engagement
Project Management
Community & Economic Development
Website Development & Maintenance

Professional Registrations & Affiliations

Certified Municipal Vulnerability
Preparedness Provider
American Institute of Certified Planners
(AICP)
National Charrette Institute (NCI)
Charrette System™ and Charrette
Management and Facilitation™
Training Certification
APA - National, RI Chapter,
LGBTQ & Planning Division

Academic Background

Master of Community Planning,
University of Maryland
Bachelor of Arts, International Studies,
Whitworth University

Professional Experience

Horsley Witten Group, Inc.,
Senior Planner, 2018 to Present
Project Planner, 2015 to 2018
RI Division of Planning, Principal Planner,
2012 to 2015
RI Housing, Technical Assistance
Coordinator, 2010 to 2012
DC Office of Planning, Consultant,
2009 to 2010
DC Office of Planning, Neighborhood
Planner, 2006 to 2008
Montgomery Housing Partnership,
Community Development Specialist,
2003 to 2006

Jeff Davis is a professional planner of over 17 years, first in the greater Washington, DC area, and then in New England for the past ten years. He has worked on a variety of planning, zoning, and community development projects. His experience underscores the interrelation of land use, housing, economic development, and social issues in the creation of community assessments and surveys, neighborhood plans, comprehensive/master plans and other local, regional and statewide community planning efforts. Much of Jeff's work requires meaningful public input and community engagement, including conducting and analyzing the results of surveys and interviews.

KEY PROJECTS - PLANNING

Comprehensive Plan, City of Chicopee, MA: Working with the city to develop its first-ever comprehensive plan with a strong emphasis on community engagement beyond the "usual suspects." Coordinating with city staff and a diverse steering committee to incorporate non-traditional topics such as food access, public health, and energy.

Master Plan, Town of Hingham, MA: Working as a subconsultant with a team of planning firms to update this plan, with an emphasis on issues related to sustainability, water, energy, and land use.

Comprehensive Plan, Town of Burrillville, RI: Worked with the town to complete a full update to its comprehensive plan, including new sections on Energy and Natural Hazards & Climate Trends. Staffed planning board meetings and ensured that all content, maps, and data conform with standards of the State of Rhode Island.

Comprehensive Plan, Town of South Kingstown, RI: Worked with the town to complete a strategic update to its comprehensive plan, focusing on Housing, Energy, and Natural Hazards & Climate Change. Staffed public meetings and workshops with the Town's Planning Board and conducted interviews and focus groups. Ensured that all content, maps, and data conform with standards of the State of Rhode Island.

Plan of Conservation and Development, Town of Haddam, CT: Worked with this town straddling the Connecticut River to complete a full update to its Plan of Conservation and Development (POCD), including all community engagement.

Sustainable Jamestown, Town of Jamestown, RI: Worked with this island community on an action plan to maintain its quality of life into the future, including issues such as water conservation, energy conservation, resiliency to climate change, diverse housing, a healthy economy, and the ability for people born in the community to choose to stay there as adults.

Housing Strategies, Town of South Kingstown, RI and Town of Smithfield, RI: Working with South Kingstown to complete a strategic study of its housing needs, including alternatives to standard single-family homes and where they can best be accommodated. This project will result in regulatory changes that will accommodate and promote more housing alternatives and affordable housing. Working with Smithfield to update the Housing chapter of its Comprehensive Plan, with an emphasis on its affordable housing strategy.

Middletown on the Move, City of Middletown, CT: Worked with the City to identify brownfield properties that may be appropriate for reuse as active recreation space. Also worked with community members to identify other opportunities for active living.



KEY PROJECTS - ZONING

Jamestown Zoning Update, Town of Jamestown, RI: Assisting the Town in a targeted rewrite of its Zoning Ordinance, with an emphasis on village zoning, environmental concerns, housing alternatives, signs, parking, and use regulations. Making presentations before the planning commission and working with staff to develop public communication materials to share changes with the public.

Mystic Education Center Zoning, Town of Groton, CT: Assisting the Town in drafting new zoning for mixed-use redevelopment of a former school and recreation campus.

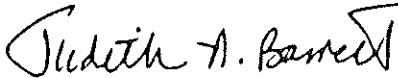
Downtown Stoughton Zoning Overlay, Town of Stoughton, MA: Assisting the Town in a targeted rewrite of its downtown overlay district, with an analysis of existing uses, desired uses, effectiveness of existing zoning, and recommendations for edits that will make it easier and more desirable for developers to create a more vibrant, walkable town center.

Warwick Zoning Update, Town of Warwick, RI and Burrillville Zoning Update, Town of Burrillville, RI: Assisting these Towns in updates to a targeted set of issues in their Zoning Ordinances, with an emphasis on renewable energy production (wind and solar), rural land uses, short term rentals, accessory dwelling units, digital signs, and more.

Groton Zoning Update, Town of Groton, CT and Braintree Zoning Update, Town of Braintree, MA: Assisted both Towns in a rewrite of their Zoning Regulations/Ordinance, to make them clearer, more user-friendly, more concise, and more effective at producing the type of development desired by the towns. These complete overhauls included changes to zoning districts, dimensional standards, the use table, definitions, use conditions, and more, as well as extensive communications with staff, commissioners, and the public about what has changed and why.

**CERTIFICATE OF NON-COLLUSION FORM
TOWN OF ARLINGTON
HOUSING PRODUCTION PLAN UPDATE**

The undersigned certifies under penalties of perjury that this bid or proposal has been made and submitted in good faith and without collusion or fraud with any other person. As used in this certification the word "person" shall mean any natural person, business, partnership, corporation, union, committee, club, or other organization, entity, or group of individuals.



Signature of Individual Submitting Bid or Proposal

Judith A. Barrett

Name of Individual Submitting Bid or Proposal

Barrett Planning Group LLC

Name of Business

February 3, 2021

Date

BY STATE LAW THIS NON-COLLUSION FORM MUST BE SIGNED AND SUBMITTED WITH THE BID OR PROPOSAL.

**CERTIFICATE OF TAX COMPLIANCE FORM
TOWN OF ARLINGTON
HOUSING PRODUCTION PLAN UPDATE**

Pursuant to MGL Chapter 62C, Section 49A, I certify under the penalties of perjury that I have complied with all laws of the Commonwealth of Massachusetts relating to taxes, reporting of employees and contractors, and withholding and remitting child support.

82-1066293

Social Security Number or
Federal Identification Number

Stedith A. Barnes

Owner and Managing Director

Signature and Title of Individual or
Responsible Corporate Officer

BY STATE LAW THIS CERTIFICATE OF TAX COMPLIANCE FORM MUST BE SIGNED AND SUBMITTED WITH THE BID OR PROPOSAL.



BARRPLA-01

CLEDDUKE

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

1/25/2021

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER RogersGray, Inc. 434 Rte 134 South Dennis, MA 02660	CONTACT NAME: PHONE (A/C, No, Ext): (800) 553-1801 FAX (A/C, No): (877) 816-2156 E-MAIL ADDRESS: mail@rogersgray.com	
	INSURER(S) AFFORDING COVERAGE INSURER A: Hanover Insurance Company (The) NAIC # 22292 INSURER B: Allmerica Financial Benefit Insurance Company 41840 INSURER C: INSURER D: INSURER E: INSURER F:	
INSURED Barrett Planning Group, LLC 6 Resnik Rd. Ste 201 Plymouth, MA 02360		

COVERAGES

CERTIFICATE NUMBER:

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

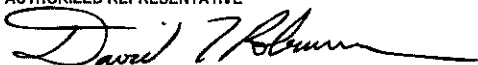
INSR LTR	TYPE OF INSURANCE	ADDL SUBR INSD WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:		OHND308469	7/10/2020	7/10/2021	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 300,000 MED EXP (Any one person) \$ 5,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COM/OP AGG \$ 2,000,000
A	AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO OWNED AUTOS ONLY <input checked="" type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> NON-OWNED AUTOS ONLY		OHND308469	7/10/2020	7/10/2021	COMBINED SINGLE LIMIT (Ea accident) \$ BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ 1,000,000 PROPERTY DAMAGE (Per accident) \$
A	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED <input checked="" type="checkbox"/> RETENTION \$ 0		OHND308469	7/10/2020	7/10/2021	EACH OCCURRENCE \$ 1,000,000 AGGREGATE \$ 1,000,000
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory In NH) <input type="checkbox"/> Y/N <input checked="" type="checkbox"/> N If yes, describe under DESCRIPTION OF OPERATIONS below	N/A	W2ND805523	1/15/2021	1/15/2022	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$ 500,000 E.L. DISEASE - EA EMPLOYEE \$ 500,000 E.L. DISEASE - POLICY LIMIT \$ 500,000
A	Errors & Omissions		LHN D308590-03	7/10/2020	7/10/2021	Per Occurrence 1,000,000
A	Commercial Property		OHND308469	7/10/2020	7/10/2021	Bus. Pers. Property 13,500

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
Consultant - zoning and community development planning

Certificate Holder is listed as Additional Insured with respects to General Liability when required by Written Contract

CERTIFICATE HOLDER

CANCELLATION

Evidence of Insurance	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
	AUTHORIZED REPRESENTATIVE 



Town of Arlington, Massachusetts

Correspondence Received

Summary:

Correspondence received from:
L. Cardarelli 04242021

ATTACHMENTS:

	Type	File Name	Description
▢	Reference Material	Correspondence_from_L._Cardarelli_received_04242021.pdf	Correspondence received from L. Cardarelli received 04242021

From: Lois Cardarelli <LCarda7535@hotmail.com>
To: "jraitt@town.arlington.ma.us" <jraitt@town.arlington.ma.us>
Date: Sat, 24 Apr 2021 19:22:48 +0000
Subject: 190 Mass Ave Development

CAUTION: This email originated from outside of the Town of Arlington's email system. Do not click links or open attachments unless you recognize the REAL sender (whose email address in the From: line in "< >" brackets) and you know the content is safe.

190 Mass. Avenue Dev't
(Between Lake & Chandler St)

I am really disturbed to hear how large the project on Mass Ave is going to be. Is anyone considering the neighbors safety, the traffic increase and the noise factor that is being brought onto our street?

I thought our zoning did not allow a 5 story building. A five-story building would be an eyesore to our lovely Capital Square.

We have a considerable amount of children traffic on our street going to and from school and the playground. Have they even been considered?

We do have to deal with a considerable amount of speeding traffic, during busy times when Chandler Street is used as a cut-through street to avoid the traffic light on Mass. Ave. Now we have to bear the burden of a considerable amount more traffic.

Well that just lowered the value of my property.

People are drawn to Arlington because they enjoy living in a town and the feel of a town versus a large city. What is being proposed is what you would see in a city. If I wanted to live in a city I would and would enjoy not paying the high taxes I do

I am not opposed to new development; I am opposed to changing the personality of our "Village" and the complete disregard to the Chandler Street neighborhood.

Arlington may consider East Arlington to have "city feel" but if you lived here you would disagree. Our neighbors help one another with snow removal, bringing our rubbish barrels in, and if you drive down our street you may find the neighbors enjoying conversation on someone's porch. You see, we take pride in our neighborhood. We care.
Thank you for taking the time,

Lois Cardarelli
34 Chandler Street
Arlington, Mass. 02474